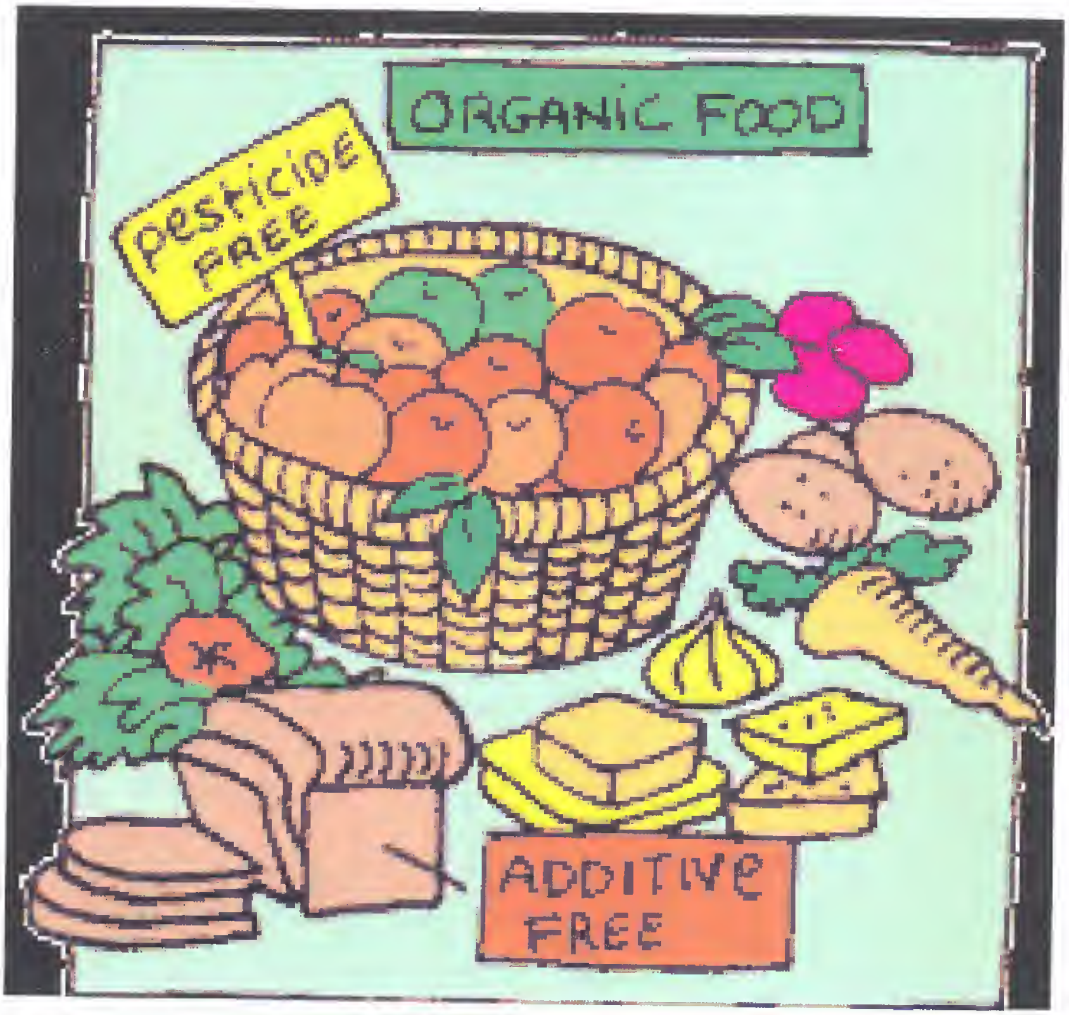
NUTRITION LIST OF ORGANIC & NATURAL FOODS

Detailed explanations of why we chose the foods listed



Tuesday, July 13, 2010

To DCYF:

We Wenceslao Gonzalez Jr. and Cibeles Jolivette Gonzalez, are sending the info that was requested with regard to brands of organic and natural foods. As we have consistently stated, we want our sons Wenceslao Adonis Gonzalez III and Galileo Basilios Gonzalez to be continued on the kosher organic diet that they had while in our care. The following pages will not only provide the name of brands that we feel are appropriate for our sons' consumption, but detailed explanations of why we chose these foods that are based on accurate nutritional data. We hope that this list will be used towards that purpose, and so benefit our children's health which unfortunately has been jeopardized during their traumatic experience .

By complying with our very reasonable request, you will not only be respecting parents' civil rights, but complying as well with your own regulations as listed in your Foster Care Regulations booklet under [Section P. Meals], a point that was clarified in the June 11th letter that we sent you.

We await your cooperation in this matter, as we feel that your compliance in this situation cannot cause you any inconvenience that will prove greater than the inconvenience that we have had to bear, at seeing our sons for nearly two years in a state of physical and emotional health that is greatly inferior to that which they enjoyed while in our care.

Sincerely,

We wish to state that we do not want our sons to consume any products that contain traces of pork, rabbit, or seafood (however minute the quantity might be). We say this for religious reasons, as well as for reasons that have their basis in a knowledge of nutrition.

Certain animals were created by G-D to be scavenger animals, and as such they were not designed for human consumption. The role of these scavenger animals is to keep the earth clean, and thus eliminate the number of potentially harmful pathogens that exist in decaying dead animal biomass, which can represent a harm to other living animals .

G-D in HIS dietary Laws forbids the consumption of pork (Deuteronomy 14:8), rabbit (Deuteronomy 14:7), and seafood (such as lobster, shrimp,clams, and fish like Catfish which have no scales) (Deuteronomy 14:9-10) .

Whether this bears any personal importance to anyone in your agency is irrelevant. We merely state it because it bears importance to us, and precisely because of the importance that it bears to us and to our way of life, it should bear importance on your decisions of what to feed our children. By feeding them anything which is contrary to our beliefs you are both violating our rights and Constitutional Law.

Reasons Based On Science & Nutrition For Not Eating Pork:

1) Pigs will eat anything including urine, excrement, dirt, decaying animal flesh, maggots, or decaying vegetables. They will even eat the cancerous growths off other pigs or animals.

2) The meat and fat of a pig absorbs toxins like a sponge. Their meat can be 30 times more toxic than beef or venison.

3) Due to it's biological structure, the pig produces much higher levels of antibodies in it's body than other animals. Far higher levels of growth hormone are produced in the pig compared to those in other animals and human beings. These high levels of antibodies and growth hormone pass across to and collect in the pig's muscle tissue.

4) Pork meat also contains high levels of cholesterol and lipids (body fats). It has been scientifically proven that these significant amounts of antibodies, hormones, cholesterol, and lipids in pork represent a serious threat to human health.

5) When exposed to excessive quantities of growth hormone as a result of a pork-based diet, the human body first puts on excessive weight and then suffers physical deformations.

6) Another harmful substance in pork is the "trichina" worm which causes Trichinosis. This is frequently found in pork, and when it enters the human body, it settles directly in the muscles of the heart and represents a possibly fatal threat. There are many other diseases carried from swine to man, particularly parasite infestations. Pork often carries parasites, some of which can survive even the high temperatures of grilling. Parasites are difficult to diagnose and even doctors sometimes can miss them. This is because many patients exhibit only vague symptoms, or no symptoms at all.

7) Unlike other mammals, a pig does not sweat , so they cool themselves using water or mud during hot weather. Perspiration is a means by which toxins are removed from the body. Since a pig does not sweat, the toxins remain within its body and in the meat.

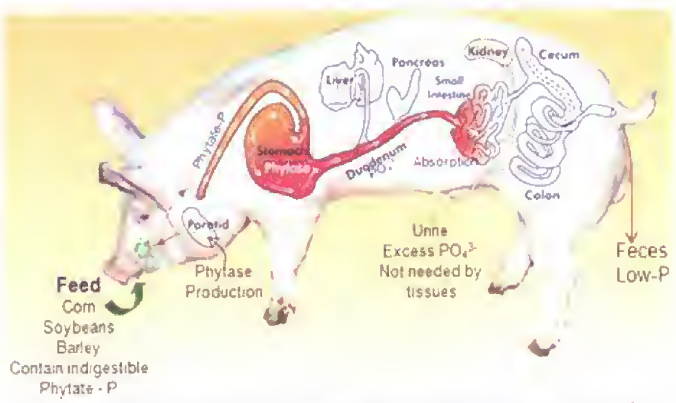
The below screenshot from a Wikipedia article speaks of the poor hygiene habits of pigs.

Diet and foraging [edit]

Pigs are omnivores, which means that they consume both plants and animals. Pigs will scavenge and have been known to eat any kind of food, including dead insects, worms, tree bark, rotting carcasses, garbage, and even other pigs. In the wild, they are foraging animals, primarily eating leaves, grasses, roots, fruits and flowers. Occasionally while in captivity, pigs may eat their own young if they become severely stressed.

Sus oliveri
Sus philippensis
Sus scrofa
†Sus strozzi
Sus verrucosus

In the race to genetically engineer food that is tastier and cheaper, Canada's **University of Guelph** is instead finding a way to produce meat that may be more environmentally friendly. **For more than a decade** the UoG has been developing the '**enviropig**', a genetically modified line of pigs that are better able to digest and process phosphorus. They are cheaper to feed because they do not require separate phosphorus food supplements, and they are better for the environment because they release up to 70% less phosphorus in their waste. Now in their eighth generation of enviropigs, the University of Guelph is still pursuing US FDA approval,' and recently applied for the same from the Canadian Regulatory Agency. If successful, enviropigs could be the first transgenic meat to make a big impact on both pollution and your plate. Should the other billion or so pigs on the planet be nervous?



University of Guelph's enviropig is better at digesting phosphorus in feed grains, making them cheaper to raise and better for the environment.

8) Many pigs have been genetically-engineered, and there have been instances where human growth hormone genes have been introduced into pigs to increase the quantity of meat that they produce. Despite the pleasant sounding reasons used by some scientists for advocating the widespread consumption of these edible monstrosities, the fact remains that it goes against the laws of nature that G-D created, and that the long-term effects on one's health when consuming such foods are unknown.

An excerpt from a 2003 article in an animal biotechnology site found at

http://www.lsuagcenter.com/en/communications/publications/agmag/archive/2003/fall/animal+biotechnology+and+the+future.htm

says the following:

One of the most obvious ways in which biotechnology can affect sheep, swine and beef production is by increasing growth efficiency in market animals. Human growth hormone genes have already been introduced into some farm animals but the animals produced with this incorporated gene generally did not have a growth advantage over those not receiving the gene.

9)Almost all these GMO pigs belong to factory farms where the pigs(who are not very clean animals to begin with) wallow in their own manure.

Confined factory farm animals often stand or lie in their own manure, next to sick or even dead animals, and with largely untreated wounds, as veterinary care is deemed too costly for these "food products"

pigs standing in their own manure

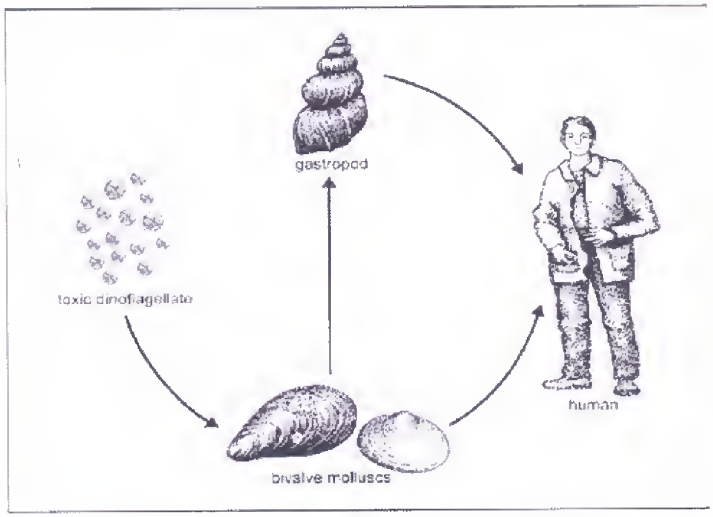
10) Many people are allergic to pork because of the high histamine levels found in the meat. Pork also encourages the formation of excessive amounts of mucous in our bodies.

A Seattle television station investigates the presence of the flesh-eating Methicillin Resistant Staphylococcus Aureus (MRSA) bacteria in pork and discovered MRSA in three percent of its sample.

(Left) flesh eating bacteria found in store bought pork.

Scientific Reasons For Not Eating Shellfish & Fish With No Scales:

Shellfish are scavengers too. Everything that dies in the sea ,or dies and ends up in the seas, are consumed by shrimp, lobster, scallops, crabs, oysters, and mussels. These specially designed fish also have the task of cleaning up contaminated waters. There are also fresh water fish who are assigned the same duty as scavengers, among whom are the catfish and the sucker fish.



The Transmission of Paralytic Shellfish Poisoning(PSP) . Bivalves are a class of marine and freshwater mollusks.

Toxicity in these fish are caused mostly by two factors:

1) Aquatic biotoxins caused by phytoplankton (a naturally occurring marine algae). There are over 4,000 species of marine algae, but only 70-80 species (~2%) are known to produce toxins. The ones that are toxic, produce toxins that are known as phycotoxins. However, whatever toxins they do emit are quickly filtered from the water by the shell fish and fish being mentioned.

2) Ocean pollution that is the result of dumping more and more untreated, or inadequately treated domestic sewage into rivers, estuaries, and coastal waters. As these careless and environmentally hazardous practices persist the percent of microorganisms in those waters that are of human origin (viruses and bacteria in particular) will continue to grow. Some of these microorganisms can cause cholera, typhoid, dysentery, skin infections, hepatitis, botulism, and eye and ear infections. It is because shell fish are scavengers (and as such accumulate the viruses and bacteria that are present in the water) that ingesting them can lead to severe illness, especially in those with weaker immune

systems, such as is the case with those suffering from AIDS or cancer, as well as the elderly and the very young.

A fish (or shellfish) that is designed to clean up waste water, and eat dead fish, animals and organisms will not die if they are exposed to harmful pathogens, because their systems are designed specifically to handle those conditions. Instead, they will accumulate the viruses and bacteria that causes disease. Hencefore, the toxins are accumulated in the digestive gland of the shellfish (hepatopancreas) and do not affect the shellfish themselves, but can reach levels that are potentially lethal to humans. This is very similar to pigs, who can become diseased from what they eat and yet not die. Fish that are meant to be eaten by humans will die if they become contaminated or infected at high levels from pollution, or certain pathogens because they were not designed to be aquatic scavengers.

Catfish (right)

You have the following types of shellfish & fish poisoning:

1) Paralytic shellfish poisoning (PSP) which can cause a lack of muscle coordination in the arms, legs and neck, and in severe cases respiratory paralysis and death.

2) Diarrheic shellfish poisoning (DSP) which is caused by toxins that are heat stable and survive normal cooking. This type of poisoning can cause gastrointestinal disorders.

3) Neurotoxic shellfish poisoning (NSP) which causes tingling in the face, throat, and digits, as well as dizziness, fever, chills, muscle pains, abdominal pains, nausea, vomiting, headache and reduced heart rate. The toxins responsible are incredibly resistant , and can survive temperatures of up to 572 degrees.

4) Amnesic shellfish poisoning (ASP) was first identified in Canada in 1987, and causes

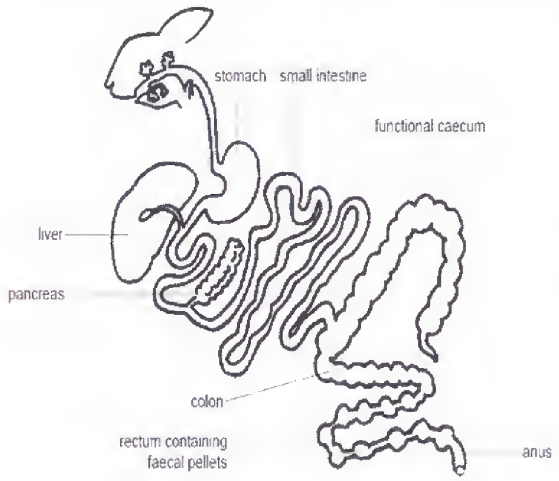
the loss of short-term memory. Among the other symptoms that it can cause are nausea, vomiting, diarrhea, headache, and neurological effects including dizziness, disorientation, and confusion. Severe cases can lead to coma and death.

The disease	Toxins	Occurrence
PSP-Paralytic shellfish poisoning	Saxitoxin	Worldwide
DSP-Diarrheic shellfish poisoning	Okadaic acid dinophysis toxin	Worldwide
NSP-Neurotoxic shellfish poisoning	Brevetoxins	USA, Caribbean, New Zealand
ASP-Amnesic shellfish poisoning	Domoic acid	North America
Ciguatera fish poisoning	Ciguatoxin (CTX)	Tropical, subtropical
Puffer fish (tetrodotoxin) poisoning	Tetrodotoxin (TTX)	Japan, South Pacific

Above is shown a graph which indicates the different types of fish poisoning, the toxin responsible, and the part of the world where it is most prevalent. Puffer fish have no scales. While Ciguatera fish poisoning may also affect clean fish, the overwhelming majority of poisoning cases, shown in the above graph, involve unclean fish and shellfish. One should also be aware that there are fish, like the common snoek, which appears to have scales, but as it is taken out of the water the scales fall off so that it does not require scaling. Due to this it cannot really be classified as clean.

Scientific Reasons For Not Eating Rabbit Meat :

Rabbits are herbivores and are not scavenger animals. They are also very cute. However, a careful study of how their digestive system functions, as well as of the nutritional value of their meat, will clarify why it is not very healthy. Even though rabbits are herbivores, and their diet only consists of grasses, forbs (herbaceous flowering plants such as sunflowers), and leafy weeds, that diet is very high in cellulose (about 33% of all plant matter is cellulose) which is hard to digest. Since, unlike some clean animals, they do not have a complex stomach, the rabbit's simple stomach structure has to do some odd things to enable it to obtain sufficient nutrients from the plants that it eats, which is all the more necessary because of the large quantities that it sometimes eats. Because the rabbit does not have a pre-stomach (like the cow does) it has an unusually large cecum. The cecum is a pouch that connects the small intestine with the colon. The rabbit's cecum is ten times larger than it's stomach, and allows it's intestinal tract to separate the fibrous materials of what it eats from the more digestible material. The more nutritious material of what it ingests becomes a cecotrope. Cecotropes are droppings that are high in various minerals, vitamins, and protein that are absolutely essential for the rabbit's health. They are formed when chewed plant material collected in the cecum is converted into pellets by the symbiotic bacteria found in said cecum, thus enabling it to digest the hard- to- digest cellulose and to produce certain B vitamins.



The pellets are 56% bacteria and 24.4 % protein and can remain up to six hours in the rabbit's stomach, while the bacteria within continues to digest the plant's carbohydrates. Afterwards soft feces are formed, which are then excreted and eaten whole by the rabbit due to it's high vitamin content, for these feces contain up to five times more vitamins than hard feces. The feces that the rabbit eats are redigested in a special part of it's stomach.

[edit]

A nest containing baby rabbits

Rabbits are herbivores who feed by grazing on grass, forbs, and leafy weeds. In consequence, their diet contains large amounts of cellulose, which is hard to digest. Rabbits solve this problem by passing two distinct types of feces: hard droppings and soft black viscous pellets, the latter of which are immediately eaten. Rabbits reingest their own droppings (rather than chewing the cud as do cows and many other herbivores) to digest their food further and extract sufficient nutrients.[11]

Rabbits graze heavily and rapidly for roughly the first half hour of a grazing period (usually in the late afternoon), followed by about half an hour of more selective feeding. In this time, the rabbit will also excrete many hard fecal pellets, being waste pellets that will not be reingested. If the environment is relatively non-threatening, the rabbit will remain outdoors for many hours, grazing at intervals. While out of the burrow, the rabbit will occasionally reingest its soft, partially digested pellets; this is rarely observed, since the pellets are reingested as they are produced. Reingestion is most common within the burrow between 8 o'clock in the morning and 5 o'clock in the evening, being carried out intermittently within that period.

Hard pellets are made up of hay-like fragments of plant cuticle and stalk, being the final waste product after redigestion of soft pellets. These are only released outside the burrow and are not reingested. Soft pellets are usually produced several hours after grazing, after the hard pellets have all been excreted. They are made up of micro-organisms and undigested plant cell walls.

The chewed plant material collects in the large cecum, a secondary chamber between the large and small intestine containing large quantities of symbiotic bacteria that help with the digestion of cellulose and also produce certain B vitamins. The pellets are about 56% bacteria by dry weight, largely accounting for the pellets being 24.4% protein on average. These pellets remain intact for up to six hours in the stomach, the bacteria within continue to digest the plant carbohydrates. The soft feces form here and contain up to five times the vitamins of hard feces. After being excreted, they are eaten whole by the rabbit and redigested in a special part of the stomach. This double-digestion process enables rabbits to use nutrients that they may have missed during the first passage through the gut, and thus ensures that maximum nutrition is derived from the food they eat.[12] This process serves the same purpose within the rabbit as rumination does in cattle and sheep.[12]

Rabbits are incapable of vomiting due to the physiology of their digestive system.[13]

It is precisely because of this unusual ,and very unhygienic process of digestion that the consumption of rabbit meat (apart from it's poor nutritional value) can be harmful to one's health. Since the rabbit eats it's own excrement, the level of toxins present in it's tissues are greatly higher than in that of other herbivores.

Rabbit meat is very lean and does not provide needed fat and essential nutrients found in other meats. Several cases from history shows us how nutritionally deficient rabbit meat is. Early French settlers in Quebec ate plenty of rabbit meat every day during their first winter, and suffered heavily from malnutrition. Even today, those who eat rabbit frequently, and who otherwise have a poor diet with regard to nutrients, can suffer from a form of malnutrition known as

Rabbit Starvation. While rabbit is claimed to be a good source of "high quality" protein, it lacks essential fatty acids and has low nutritional value. Rabbit meat is moderately high in purines, which are organic compounds that are two ring structures made up of carbon and nitrogen atoms. When the purines are metabolized in the body, the end product is uric acid. Uric acid in excessive levels can lead to gout, which is why rabbit meat is not particularly healthy, given it's moderately high purine levels.

Rabbit meat is only really high in protein, vitamin B12, and phosphorus (100g serving provides approximately 30% of the recommended daily intake of phosphorus), however it provides less zinc and iron than other types of meats.

It is of value to consider that certain types of foods such as dried beans and peas, as well as clean fish like cod, or cleans meats such as lamb, or even chicken, are relatively high in phosphorus without the additional disadvantages of rabbit meat.

The human body needs 20 different types of amino acids . Of these 20 , there are 8 amino acids (which are referred to as essential amino acids) which the human body cannot synthesize on it's own and so must obtain them from foods that are consumed.

You need to break down in the body the proteins into amino acids, and afterwards convert the amino acids into glucose with your liver , in order to use it as a source of energy (through a process called gluconeogenesis).

This is one of the reasons why the amount of essential amino acids present in certain foods, as well as the fat content is of prime importance. Rabbit meat is low in certain amino acids that humans cannot synthesize themselves. The process of converting the amino acids into glucose is time consuming and can deplete fat reserves in the body, which is not a good thing when ingesting an extremely lean meat such as rabbit. However, since protein is the

main nutrient in rabbit meat, this process automatically has to occur if the protein is to be converted into energy for the body. When the body's energy reserves (fat) run out, from converting the protein of extremely lean meat to glucose on a frequent basis, ammonia can start to build up. Ammonia is produced when unwanted amino acids are being broken down in the body. Usually ammonia is converted into urea in the liver . Urea is a chemical compound found in urine, and is the waste that is produced when the body metabolizes protein. Urea is transported through the blood to the kidneys, where it is then excreted in urine (represented by water in the graph below).

Actually, the reason why urine gives off an ammoniacal smell is because in the presence of oxygen, the urea is converted back to ammonia. When the body consumes more protein than can be converted into glucose, the protein is lost as amino acids that are excreted in urine, as there are no energy reserves (fat) to complete the conversion process into glucose , and so into energy. Since unwanted amino acids that are broken down (but not converted to glucose) create ammonia, the ammonia can start to accumulate in the blood, leading to possible brain damage and even coma.

Since the liver converts amino acids into glucose, and also ammonia into urea, those who suffer from liver disease are at greater risk for ammonia buildup and should avoid rabbit meat, especially if they have an otherwise nutritionally deficient diet.

Tularemia, which is common to mice and other types of rodents, has also been detected in wild caught rabbits. It is also known as "rabbit fever" and can be contracted from eating the meat of an infected rabbit, or being exposed to the blood of an infected rabbit. The disease however in domestic rabbits is practically unheard of. Nevertheless, those who eat

wild caught rabbit meat are always at some risk of being exposed to this disease. During our research we were disappointed to see how there exists a certain level of disinformation with regard to the true nutritional value of rabbit meat. This is due largely in part to ongoing attempts in the last few years to create a new market for rabbit meat, which up until recently has not been a widely consumed product, as the screen shots below show:

CENTER FOR FOOD SCIENCE AND NUTRITION RESEARCH

For better foods, better health

- Winter - 1998 "Update" Newsletter Article -

New market for rabbit?

University meats specialist will offer consumers opportunity to taste new rabbit products

The information presented in Tables 1A and 1B suggests there is a small viable market for rabbit meat that is currently being serviced. The people contacted by the CAED were unaware of a Georgia USDA inspected rabbit meat processing facility but were interested in speaking with its operators.

Major Obstacle

According to Mr. Burel and others, the problem facing the traditional retail meat rabbit market is the lack of consumer knowledge and awareness of the product. This pertains to the health benefits of eating rabbit meat as well as product availability. Consumers do not consider rabbit meat when they are shopping and there is a lack of in-store product promotion. As a result, consumers do not consider purchasing rabbit meat and are not prompted to purchase the product from in-store promotion.

Retail Market Plan of Attack

1. Develop in-store marketing material to "attract" consumers' attention. According to supermarket representatives, the vast majority of people are not aware the store carries rabbit meat and have to rely on store employees to direct them to the product. In-store sinage would provide the needed material to attract consumers attention and alert them to the various rabbit packages.

2. Try to establish a working relationship with a supermarket chain. Bill Burel appears to be willing to talk and work with Tony Graham and possibly try a test marketing campaign where the cooperative would supply fresh and frozen rabbit meat and support marketing material to determine its impact on rabbit meat sales. Study results in the fresh produce department indicate that in-store displays and promotions are the most effective way to promote products. Utilizing these results, creating in-store promotional material may

So it was a disappointment to see Dr.Sears say the following about rabbit meat , without taking into consideration certain important factors:

"Rabbit meat is higher in vitamin B-12 than any domestic meat, supplying six micrograms, 100 percent of the recommended dietary allowance."

While it is true that rabbit meat is high in vitamin B12, protein, and phosphorous, the quality of said nutrients that are being extolled, as well as the lack of other vital nutrients , are conveniently being overlooked.

Not all nutrients are necessarily of superior quality. Just like there are multi-vitamin supplements that while

providing a high dose of vitamins, use poor, cheap forms of nutrients, and are high in sugars and carbohydrates, there are certain foods that provide low quality nutrients, thus diminishing the value of their actual presence in the food that is being consumed.

The problem with rabbit meat is the following:

Soft faeces contain more protein, minerals and vitamins than hard faeces. Protein of soft faeces is high in essential amino acids such as lysine, sulphur amino acids or threonine. Cecotrophes consist of small pellets of 5-mm diameter, which rabbit can recognize. They are taken directly from the anus, swallowed without mastication, and stored in the fundus of the stomach for 3-6 hours. The faeces contain bacteria, which here continue their proliferation and fermentation of starch.

After getting into the stomach, soft faeces do not mix with other food as they are placed separately at the stomach fundus and are protected against digestion with a mucous envelope, which consists of vitamin B_{12} complex with mucoproteides. The bacteria that are included in the cecotrophes here continue their proliferation and fermentation of starch producing milk acid as a final product.

The high vitamin B12 content is due to the rabbit's own soft feces which it ingests (called cecotrophes). Earlier in this report we explained how symbiotic bacteria in the rabbit's cecum helps to digest the hard-to-digest cellulose in a rabbit's diet, and to produce certain B vitamins which are then converted into the cecotrophes (as the provided info screenshots from scientific sites show).

Rabbits possess a cecum, which is involved with digestion and are hindgut fermenters. At night the cecal contents of a healthy rabbit move rapidly through the large bowel and are excreted from the anus. These "cecotrophes" are also known as soft feces or night feces, and are then consumed by the rabbit, usually directly from the anus. The consumption of feces, called coprophagy and practiced by rabbits, most rodents and a variety of other animals, is normal and usually begins between the second and third week of age, when young rabbits begin consuming solid food.

Normal fecal pellets are hard, round and excreted during the day. Cecotrophes are usually produced in the early morning hours and are small, soft, sweet-swelling and about the size of the pea. They contain high levels of B vitamins and vitamin K, and twice the protein and half the fiber of standard feces. Their redigestion after being eaten by the rabbit helps absorb previously undigested nutrients and reinoculates the rabbit's gut with essential nutrients and beneficial microbes. While coprophagy seems unsavory to us, it is a normal and necessary behavior of healthy rabbits.

Cecotrophes may be high in protein and B vitamins, but they are nevertheless the rabbit's own excrement which it eats and then redigests. Surely such a poor source of nutrients should be shunned when other healthier options are available for obtaining the same nutrients, as well as other vital nutrients not found in rabbit meat.

The rabbit's meat is extremely low fat (as this screenshot from an exotic meats site shows). While no one disputes the obvious hazards of consuming excess

Rabbit Farm-raised rabbit is lean, slightly sweet meat with a closely textured flesh that has virtually no fat and is very high in protein. Rabbit is an alternative to chicken, with the additional advantage that it is commonly raised without the use of hormones or steroids.
Rattlesnake is light and chewy, with a delicate flavor that resembles chicken. Rattlesnake chili is a favorite dish at a number of restaurants in the Southwestern U.S.
Snapping Turtle has the texture of frog legs or lobster. The four legs and the tail are dark meat; the next and back straps are white meat.

fats , many (even within the medical establishment) seem to occasionally forget that fat is needed for the ongoing function of vital body processes. This is all the more a reality in the case of children who need more fat in their diets than adults to aid in their growth and development. Of course, we are in agreement with Dr. Greene, when he says that children do not need large amounts of fat in an article that we have enclosed within this report. Nevertheless, they do need more fat than adults, as well as other vital nutrients which cannot be obtained though rabbit meat.

News Sport Comment Culture Business Money Life & style

News › Society › Health

Children need fat in food, say experts

Press Association
Society Guardian, Thursday 16 August 2007 10.47 BST
Article history

Crisps: no need to ban them from children's diets

Parents should include some fat in the diets of their children despite concerns about obesity, experts said today

Research published in the Nutrition Journal said fat should be included as part of a healthy and balanced diet because children burn more body fat than adults for each calorie used up

(Note:We do not agree with the crisps comment above)

Just like certain unhealthy and inferior fats, such as artificial fats like trans fats (partially hydrogenated oils, etc.) do not conduce to long-term health, nutrients (however high the percentage consumed) that are of an inferior quality cannot aid in obtaining optimum health.

So it light of all of this, Dr. Sears' advocacy of rabbit meat consumption is sad. By following his

Children Need Fat in Food

SteadyHealth Community Home » Children's & Teens health » Toddlers to Teens

AUTHOR	MESSAGE
Posted: 08/20/07 - 04:38	
Lori Joined: 23 Jul 2005 Posts: 558 Veteran VETERAN	Health expert have announced that parents need to include fat in their children diets because fat help growth and normal development in children. It has been shown that children use and burn more body fat than adults for each calorie used up. The researchers conducted a study in which they included 10 children aged 6 to 10 and 10 adults who all had healthy BMIs and who were given a standard diet - meals consisting of 13-18% protein, 50-55% carbohydrates and 30-35% fat. The study participants didn't have to perform any activity but simply spend their time watching television or reading. The researchers wanted to calculate how much fat participants oxidized by measuring their metabolic rates and the amounts of nitrogen in urine. The total amount of fat burned was pretty much the same in both children and adults except that the children burned considerably more fat relative to the amount of energy they used. Researchers report that fat needs to be included in the children's' diets to support normal growth processes such as higher rates of protein synthesis, lipid storage and bone growth. However, due to the obesity and health concerns, many parents restrict dietary fat. The study shows that giving children low-fat and sugar-free products was a bad idea and that sufficient fat should be added to the children's diets including small amounts of saturated fats. The recommended daily intake of fat for children aged 7 to 10 should be 76.6g a day for boys and 67.7g a day for girls.

advice, parents will be giving their children an extremely low fat meat, that contains poor quality protein and B vitamins which have their source in the rabbit's own droppings which it afterwards consumes. Children will also be eating a meat that has less iron and zinc than other safer and more nutritious meats, during a period in life when iron is crucial for neurological and visual development. Due to the potential for suffering from learning disorders as a result of iron deficiency, and because children should be consuming more whole grains, fruits, and vegetables than meats, caution should be exerted when choosing which meats will form part of a child's limited meat consumption in order to obtain the maximum nutritional value possible. We however disagree with the recommendation in the analysis screenshot provided above, stating that rabbit meat would be good for hypertension diets. While it is true that rabbit is very low in sodium, the other healthier and kosher meats provided in the green graph above (Yes! Elk and Bison are kosher, go to http://www.auri.org/agnews-section.php?sid=32&agnid=49) are relatively low in sodium as well, with the added benefit

Abstract Article Figures/Tables References

Meat Science
Volume 73, Issue 4, August 2006, Pages 635-639

doi:10.1016/j.meatsci.2006.03.004 | How to Cite or Link Using DOI
Copyright © 2006 Elsevier Ltd. All rights reserved.
Permissions & Reprints

Cited By in Scopus (6)

Mineral analysis in rabbit meat from Galicia (NW Spain)

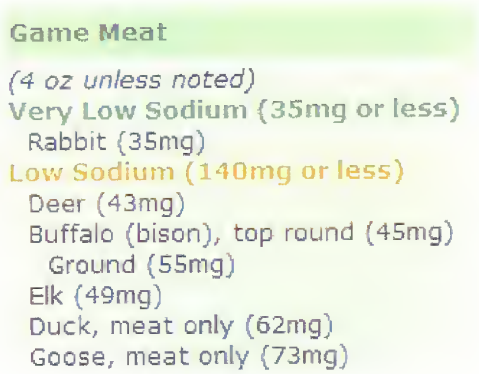
M. Hermida[a], M. Gonzalez[a], M. Miranda[b] and J.L. Rodriguez-Otero[c]
[a]Laboratorio de Mouriscade, Diputación Provincial de Pontevedra, 36500 Lalín, Galicia, Spain
[b]Departamento de Ciencias Clínicas Veterinarias, Facultad de Veterinaria, 27002 Lugo, Galicia, Spain
[c]Instituto de Investigación y Análisis de Alimentos, Facultad de Veterinaria, Universidad de Santiago, 27002 Lugo, Galicia, Spain

Received 7 April 2005, revised 9 March 2006, accepted 10 March 2006 Available online 18 March 2006

Purchase the full text article
PDF and HTML
All references
All images
All tables

Abstract

A total of 54 rabbits 50, 70 and 90 days old, were taken from farms in Galicia (NW Spain), 18 rabbits of each age were sampled. The minerals in the muscle meat from the back legs of the rabbits were analysed, and the following average concentrations were found: ash 1.21/100 g; potassium 388 mg/100 g; phosphorus 237 mg/100 g; sodium 60 mg/100 g; magnesium 27 mg/100 g; calcium 8.7 mg/100 g; zinc 10.9 mg/kg; iron 5.56 mg/kg; copper 0.78 mg/kg; and manganese 0.33 mg/kg.
The high potassium and low sodium concentration may make rabbit meat particularly recommended for hypertension diets. Rabbit meat is rich in phosphorus, and 100 g provides approximately 30% of the recommended daily intake. However, rabbit meat provides less zinc and iron than meats of other species. The Galician rabbit meat analysed in this study, shows higher copper and manganese, and lower calcium contents than those found in the literature for rabbit meat of other origins.



of additional nutrients not present in rabbit.

Dr.Sears statements found at: http://www.askdrsears.com/html/4/t043500.asp

The following clean meats were not seriously considered by Dr. Sears who barely mentions deer and lamb meat, giving only scanty data on each. He is also a supporter of high soy consumption (something which in excess is unhealthy, and we will later explain why). The only merit that he has, is that at least he is against pork consumption, and he also has spoken somewhat positive things about organic food. However, in the face of so much scientific evidence indicating that pork is unhealthy, not much explanation is needed to explain something which is already so widely known.

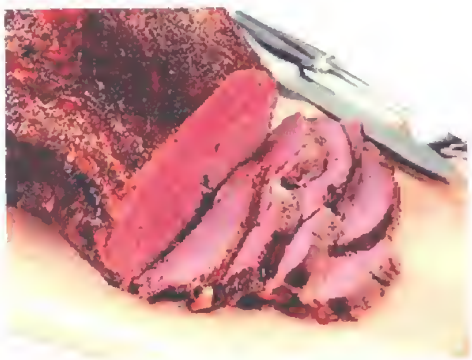
Duck meat has a high value of Phosphorus and Zinc, and a very good source of Protein, Vitamin A, Thiamin (vitamin B1), Riboflavin (vitamin B2) , Niacin (Vitamin B3), Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Iron, Copper, and Selenium.

Deer meat in general is lower in fat, cholesterol, and calories. It is also a better source of vitamins than most meats.

1) Per 3 ounces of cooked deer meat provides a source of vitamin B6 and B12 as well as riboflavin, niacin and, thiamin

2) 3 ounces of cooked meat is only 158 calories

3) This meat is low in sodium and high in protein .



Lamb, a healthy choice for eating meats high in vitamins and minerals, although it is high in saturated fat. Research shows that by eating lamb it reduces the likeliness of having Alzheimer's disease in old age due to it's high zinc content. Because of the high saturated fat one should eat it in moderation. Meat never should be abundant in one's diet. It should only be consumed in moderate portions to ensure adequate vitamin intake.

Bison has multiple vitamins and nutrients. Also, bison contributes about 69% more iron to your diet per serving than beef. Bison contains essential fatty acids, linoleic omega 3 and omega 6, which are necessary for the human digestive system.

A new study indicates that 20mg of zinc five times a week may improve memory and school performance, especially in boys. Good sources of zinc are beef, lamb (shown above), duck (shown in previous page), dried beans and peas, whole grains, fortified cereals, nuts, milk, cocoa, and poultry. Zinc is needed for growth and immune function , and may be important for eye-hand coordination and reasoning in very young children.

Zinc helps children think

06-Apr-2005

Related topics: Research, Minerals, Cognitive and mental function

Eleven-year-olds that took zinc supplements for five days each week had better mental performance after three months than their classmates, said researchers yesterday.

The children taking an extra 20mg of zinc responded more quickly and accurately on memory tasks and with more sustained attention than classmates who did not take the mineral.

Beneficial effects were seen regardless of the youngsters' previous zinc status, said the researchers led by Dr James Penland from the US Agricultural Research Service's Grand Forks Human Nutrition Research Center in North Dakota.

The findings, presented at the Experimental Biology meeting this week, suggest that there could be new demand for fortified foods and supplements for this age group.

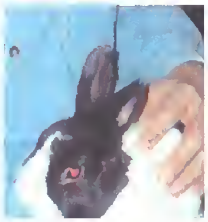
Although zinc nutrition has been related to motor, cognitive and psychosocial function in very young children and adults, this is the first study of its effect in adolescents.

Zinc deficiency is not uncommon, even in nations such as the United States, and the risk is particularly high in adolescents, said Dr Penland, because they are undergoing rapid growth and often have poor eating habits. They may not consume enough zinc-rich foods like red meat, fish and grains.

Examples Of Disinformation To Promote A Growing Rabbit Meat Market

Myth:

Benefits Of Raising Rabbits For Meat



Rabbit meat is a great food, it is extremely low in fat and cholesterol. In fact rabbit meat is one of the lowest fat meats you can find! Rabbit meat is also high in protein and amino acids. Rabbit meat is also very easy to digest. In today's health conscious world, many people are beginning to see how beneficial rabbit meat can be to their diet. Rabbit meat is as healthy as turkey or fish, and many find the taste of this meat to be delicious. Did you know raising rabbits for meat on your own ensures you get a healthy drug free meat?

The same type of promotion being done for soy by spreading erroneous data, is also being done to promote the sale of unhealthy meats.

Fact:

Encyclopedia > Rabbit starvation

Rabbit starvation is the form of acute malnutrition caused by excess consumption of rabbit meat (and possibly other lean meats) coupled with a lack of other sources of nutrients. Symptoms include diarrhea, headache, lassitude, a vague discomfort and hunger that can only be satisfied by consumption of fat or carbohydrates.

Possible mechanisms for rabbit starvation:

- Lack of fats in the diet.
- Rabbit being comparatively low in some amino acids that human beings cannot synthesize themselves.
- Lean meat, being mostly protein, must be broken down into amino acids and then converted into glucose (via gluconeogenesis) in order to be used as an energy source. This process takes time, and can not be done quickly enough to meet the energy requirements of an active person. After the body's energy reserves (fat) are depleted, the energy requirements to sustain basic life processes are not met.
- The ammonia released during the process of converting amino acids into glucose can not be cleared by conversion to urea quickly enough. The buildup of ammonia is poisonous.

The following anecdotes, from the anthropologist Vilhjalmur Stefansson and from Charles Darwin, provide interesting insights into rabbit starvation.

Stefansson wrote as follows.

"The groups that depend on the blubber animals are the most fortunate in the hunting way of life, for they never suffer from fat-hunger. This trouble is worst, so far as North America is concerned, among those forest Indians who depend at times on rabbits, the leanest animal in the North, and who develop the extreme fat-hunger known as rabbit-starvation. Rabbit eaters, if they have no fat from another source--beaver, moose, fish--will develop diarrhoea in about a week, with headache, lassitude and vague discomfort. If there are enough rabbits, the people eat till their stomachs are distended; but no matter how much they eat they feel unsatisfied. Some think a man will die sooner if he eats continually of fat-free meat than if he eats nothing, but this is a belief on which sufficient evidence for a decision has not been gathered in the North. Deaths from rabbit-starvation, or from the eating of other skinny meat, are rare, for everyone understands the principle, and any possible preventive steps are naturally taken."

Darwin, in The Voyage of the Beagle, wrote

"We were here able to buy some biscuit. I had now been several days without tasting any thing besides meat: I did not at all dislike this new regimen; but I felt as if it would only have agreed with me with hard exercise. I have heard that patients in England, when desired to confine themselves exclusively to an animal diet, even with the hope of life before their eyes, have hardly been able to endure it. Yet the Gaucho in the Pampas, for months together, touches nothing but beef. But they eat. I observe, a very large proportion of fat, which is of a less animalized nature; and they particularly dislike dry meat, such as that of the Agouti. Dr. Richardson, 6 also, has remarked, "that when people have fed for a long time solely upon lean animal food, the desire for fat becomes so insatiable, that they can consume a large quantity of unmixed and even oily fat without nausea:" this appears to me a curious physiological fact. It is, perhaps, from their meat regimen that the Gauchos, like other carnivorous animals, can abstain long from food. I was told that at Tandeel, some troops voluntarily pursued a party of Indians for three days, without eating or drinking."

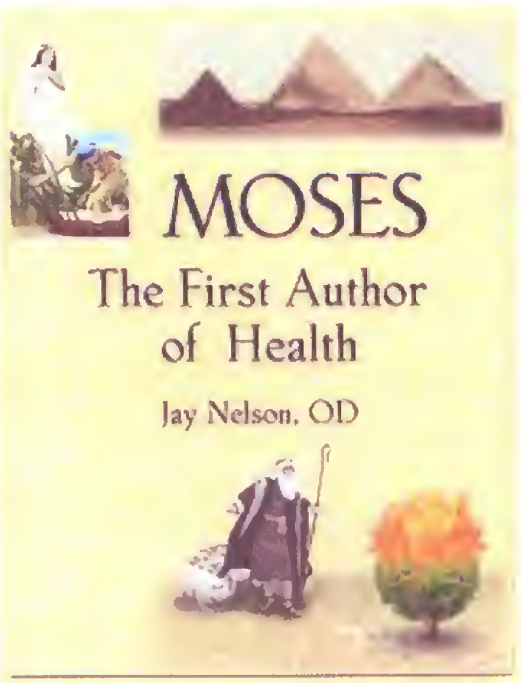
Cute pets but bad food.

Among the modern scientists that have confirmed the scientific validity of kosher Laws is: Dr. David Israel Macht (February 14, 1882 - October 14, 1961) who in 1953 conducted toxicity tests on many different kinds of animals and fish, and came to the conclusion that the toxicity of Biblically unclean animals was higher than that of the clean animals, and that the correlation with the descriptions found in in Leviticus was 100%. Macht's study also matches the kosher classification performed by James W. Atz, PhD. Dr. Atz's has made a list of kosher and non-kosher animals that has been published by the Orthodox Union Kosher Food Guide and in the Orthodox Union Kosher Consumer Directory.

□ An Experimental Pharmacological Appreciation of Leviticus XI and Deuteronomy XIV, (1953). In which Macht used his phytopharmacology technique on samples of both Levitically clean and unclean animals, and showed a markedly higher phytotoxic index for the unclean meats and the correlation was 100%.[7]

Dr. Macht's 1953 study found at the following URL:

http://members.dslextreme.com/users/hollymick/Macht1953.pdf



Book can be found at url below:

http://store.nwcreation.net/mofiauofhe.html

We personally do not believe in giving meat frequently to children, only in small quantities, and we wish for that meat to be Biblically clean and of the best nutritional quality.

We were not giving them meat at the time of their removal, though they were consuming dairy and egg products, and we had been giving them throughout a large part of their lives organic yogurt that had a DHA supplement from clean fish sources.

Ingredients: (*strawberry-banana w/cereal and DHA*) cultured pasteurized organic whole milk, naturally milled organic sugar, organic strawberry puree, organic banana puree, organic oat flour, organic flaxseed concentrate, organic rice flour, organic oat bran, fish oil (anchovy oil, sardine oil, tilapia fish gelatin: a natural source of DHA), natural flavor, organic beet juice concentrate (for color), pectin.

Contains our exclusive blend of 6 live and active cultures, including L acidophilus, bifidus, l. casei, and l. rhamnosus

They also ate organic vegetables, fruits, and whole grains, apart from their Organic Toddler formula and other supplements. We were planning to start them on small quantities of clean meats as soon as they turned four, mostly chicken or fish.

We ask that if any fish be given to them, for the sake of simplicity, and to avoid any confusion , that only tuna or cod (that is wild caught), and perhaps wild caught salmon be given to them in small quantities, and purchased at Whole Foods Supermarket.

Since there is no way to certify fish organic, wild caught fish assures that the fish have not been exposed to antibiotics used to prevent diseases in farmed fish, and that they have not been genetically modified in any way. Farmed-fish have many hazardous toxins, and an inferior nutritional value to that of wild caught fish by having less usable omega-3 fatty acids than wild-caught fish, and also a 20% lower protein content.

To see hazards of farmed fish go to :

http://www.draxe.com/health-articles/2010/3/3/the-dangers-of-farmed-fish.html

Farmed fish have recently been given gene altering drugs that make them produce excessive amounts of growth hormones with the end result that the fish grows six times larger than the normal size of it's species.

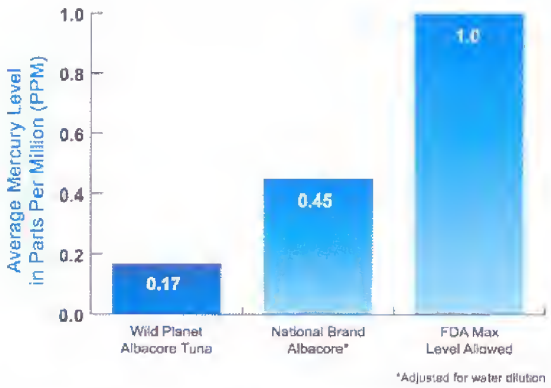
Canthaxanthin is a synthetic pigment that is used to **add a pink color to farm-raised salmon.** Wild salmon get their color naturally by feeding on krill. Canthaxanthin is a compound found in sunless tanning pills. Studies have found that canthaxanthin can affect pigments in the retina of the eye, leading to a **ban of its use in the UK—but not the US**.

University of British Colombia professor Daniel Pauly calls aquafarms "floating pig farms" because tremendous amounts of fish feed and fish waste accumulate on the sea floor because of them, creating a perfect breeding ground for bacteria that threaten other marine life.

Since even wild caught fish can be exposed to traces of mercury, we ask that our sons be given, if any fish, only minute quantities of the indicated fishes, infrequently . Mercury can be found in fish, some dental work (which will serve as basis for another request that we will make), and in some vaccines. Children poisoned by mercury may develop problems of their nervous and digestive systems, and kidney damage. Very young children are more sensitive to mercury than adults. Because of this, we will insist that if our children be given any fish, that it be the brand Wild Planet Wild caught Albacore Tuna which has been shown in tests to have the least amount of mercury as well as a high percentage of Omega 3 fatty acids (up to six times more than other brands totaling 3,460 mg per 5 oz. can). There are approximately 2.5 servings in each can. The can costs $3.39 and would provide each of our boys with a serving and a quarter.

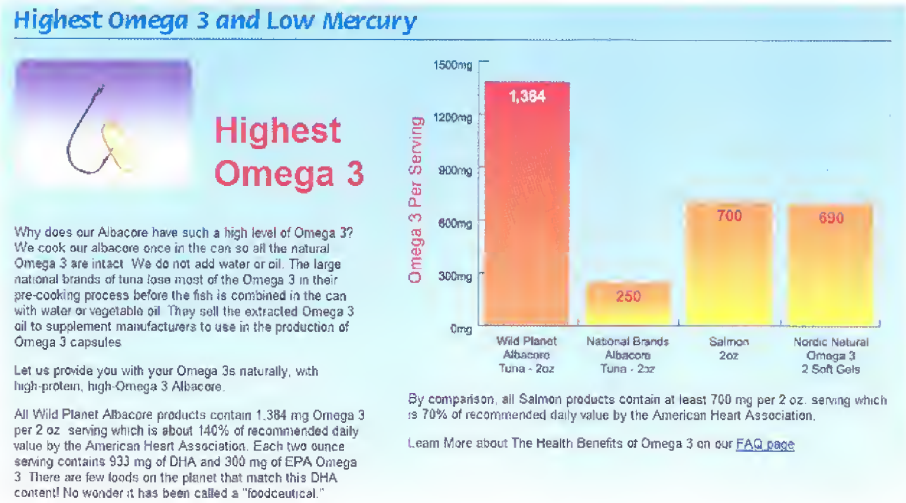
22

We are only asking that our sons be given the same care with regard to nutrition that we would gladly provide ourselves, had we not been illegally deprived of their custody without due process. If your agency truly cares about the welfare of children, rather than for what is most convenient, or what suits the interests of others, the endeavor of providing our sons with a high quality nutritious diet should neither be hard to pursue nor to implement. If you believe (mistakenly, of course) that we are not fit to take care of our children, then you should be providing them with a quality of care that is far superior to that which we provided, rather than proving our supposed incompetency by refusing to heed our concerns and so, provide our sons, while under your "custody" with an inferior quality of care . Each brand which we insist be given to them is based on careful analysis and consideration rather than on spontaneous whims. This brand is an impressive source of Omega 3 fatty acids which is vital for cognitive development.



Comparing Wild Planet test results with FDA albacore test results adjusted for water dilution arrives at the following comparison:

- Wild Planet albacore average mercury test result: 0.17ppm - 62% less
- National brands albacore average mercury test result adjusted for water dilution: 0.45ppm
- FDA maximum level allowed 1.0 ppm



Certain fatty acids, especially the oils found in cold-water fish, can be used to improve brain function, reduce memory loss, and retard cognitive decline.

Our sons have already been greatly traumatized, and poor nutrition can seriously affect both behavior and development.

The Wild Planet brand also has wild caught salmon. If for some reason this brand is not present (which we have seen and puchased at Whole Foods) then the 365 brand of wild caught tuna or salmon will do. However, we do not wish our first choice of Wild Planet (which is way healthier) to be brushed aside in order to save money. We do not think that that would be fair, because if they were with us, we would not save money at the expense of their health. Since it was your choice to get involved in this injustice, we demand that our sons receive the same high quality diet that we would give them.

Meats To Be Given To Our Sons:

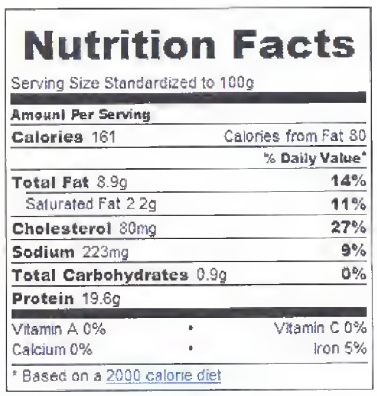
We already explained in great detail both our religious beliefs and our scientific reasons for not giving them under any circumstances Biblically unclean meats.

We are not very big meat eaters, and even many Biblically clean meats we do not really eat, only preferring to eat from time to time chicken or fish.

We ask that if any meat be given to them, that it be chicken or turkey (poultry) in small quantities of the following brands:

Kosher Valley chicken or turkey (either ground or in cutlets). These chicken and poultry are vegetarian fed and have not been given antibiotics or hormones. They meet strict animal welfare standards, as well as standards of cleanliness, purity, and wholesomeness.

1 pound of Kosher Valley ground turkey costs $6.83, which considering the portions that small children eat should last a while. 1 pound of Kosher Valley chicken breast cutlets sell for $ 8.24



Nutrition Facts

Serving Size Standardized to 100g

Amount Per Serving

Calories 161	Calories from Fat 80
	% Daily Value*
Total Fat 8.9g	**14%**
Saturated Fat 2.2g	**11%**
Cholesterol 80mg	**27%**
Sodium 223mg	**9%**
Total Carbohydrates 0.9g	**0%**
Protein 19.6g	

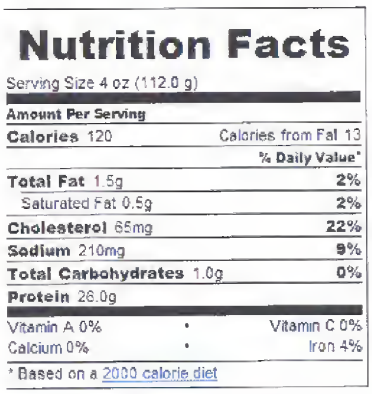
Vitamin A 0% • Vitamin C 0%
Calcium 0% • Iron 5%

* Based on a 2000 calorie diet

See more extended nutritional details

Energy	161 kcal
Protein	19.64 g
Total lipid (fat)	8.93 g
Carbohydrate, by difference	0.89 g
Iron, Fe	0.96 mg
Sodium, Na	223 mg
Fatty acids, total saturated	2.232 g
Cholesterol	80 mg

Calories in Chicken Drumsticks Raised Without Antibiotics (Kosher Valley) (left)



Nutrition Facts

Serving Size 4 oz (112.0 g)

Amount Per Serving

Calories 120	Calories from Fat 13
	% Daily Value*
Total Fat 1.5g	**2%**
Saturated Fat 0.5g	**2%**
Cholesterol 65mg	**22%**
Sodium 210mg	**9%**
Total Carbohydrates 1.0g	**0%**
Protein 26.0g	

Vitamin A 0% • Vitamin C 0%
Calcium 0% • Iron 4%

* Based on a 2000 calorie diet

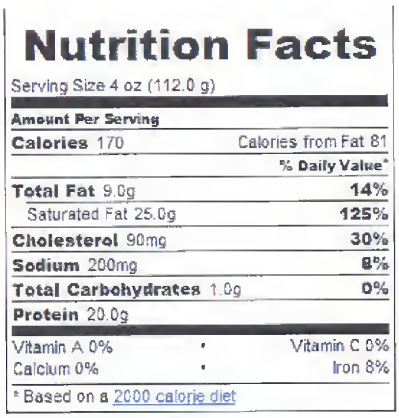
See more extended nutritional details

Energy	120 kcal
Protein	26 g
Total lipid (fat)	1.5 g
Carbohydrate, by difference	1 g
Iron, Fe	0.72 mg
Sodium, Na	210 mg
Fatty acids, total saturated	0.5 g
Cholesterol	65 mg

Calories in Boneless Skinless Chicken Breast Cutlets Raised Without Antibiotics (Kosher Valley) (left)

Calories in Ground Turkey Breast Raised Without Antibiotics (Kosher Valley) (right)

All bones should be removed from any chicken drumstick or thigh before being given to them. Meat should be given in bite-size chunks so that their little teeth can handle it without the risk of choking.



Nutrition Facts

Serving Size 4 oz (112.0 g)

Amount Per Serving

Calories 170	Calories from Fat 81
	% Daily Value*
Total Fat 9.0g	**14%**
Saturated Fat 25.0g	**125%**
Cholesterol 90mg	**30%**
Sodium 200mg	**8%**
Total Carbohydrates 1.0g	**0%**
Protein 20.0g	

Vitamin A 0% • Vitamin C 0%
Calcium 0% • Iron 8%

* Based on a 2000 calorie diet

See more extended nutritional details

Energy	170 kcal
Protein	20 g
Total lipid (fat)	9 g
Carbohydrate, by difference	1 g
Iron, Fe	1.44 mg
Sodium, Na	200 mg
Fatty acids, total saturated	25 g
Cholesterol	90 mg

Poultry products may also be given to them in minute quantities and infrequently from Wise Organic Pastures Kosher Organic Chicken & Turkey, which is already available in several Whole Foods stores or other natural foods stores. If possible , we always prefer organic meat to naturally raised. However, if such an option is truly not available then the Kosher Valley will do. We do not wish for them to consume poultry from any other brands. This is not a whim on our behalf, these specific brands have ultra-high standards when it comes to cleanliness, following Biblical Laws, and care for animal welfare .

Wise Organic Pastures has since enjoyed a 40% growth in sales and greater market penetration with distribution in Whole Foods Market and numerous conventional grocery chains. It won five awards, including American Corporate Identity and *Brand Packaging's* Packaging That Sells.

We feel that such rigorous standards can only serve to contribute to good health in our boys.

We prefer that our sons get their protein from mostly non-meat sources like those shown on the list to the right. These foods (with the exception of peanut butter) were consumed by them in abundance, and as a result they were always strong and healthy. Small quantities of organic and natural clean meats will not hurt, but we do not wish for them to be our sons' main source of protein. We will be explaining on the importance of yogurt in a child's diet, and how it can provide children with not only protein, but with many other nutrients that ward off illness.

- beans and legumes
- nuts
- peanut butter
- cheese
- yogurt
- whole grain products

We wish for any meat to be cooked thoroughly (either steamed or in 365 extra virgin olive oil) before the expiration date on the package in order to ensure safety. Frequent hand washing, and great care to prevent cross contamination in the kitchen should be taken by whomever is preparing the food.

We ask that any disinfecting around our children's food, or while preparing it, be done with vinegar which is a natural non-toxic disinfectant. Vinegar was always used in our home and it worked for us. We would clean their eating surfaces and even some of their toys with vinegar.

Vinegar Kills Bacteria, Mold and Germs

posted by Annie B Bond May 5 1999 9 01 pm

filed under healthy home non-toxic cleaning

Add to Favorites Tell a Friend Share Print

Like 2 Digg Reddit Care2 StumbleUpon more

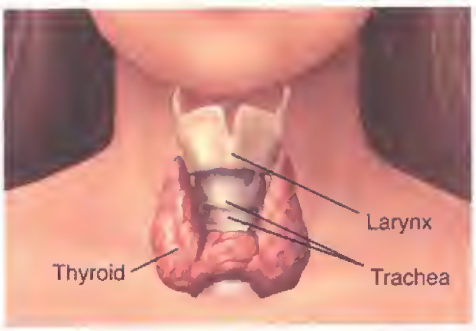
Vinegar is a mainstay of the old folk recipes for cleaning and with good reason The vim of the vinegar is that it kills bacteria mold and germs

Heinz company spokesperson Michael Mullen references numerous studies to show that a straight 5 percent solution of vinegar—the kind you can buy in the supermarket—kills 99 percent of bacteria 82 percent of mold and 80 percent of germs (viruses) He noted that Heinz can't claim on their packaging that vinegar is a disinfectant since the company has not registered it as a pesticide with the Environmental Protection Agency However it seems to be common knowledge in the industry that vinegar is powerfully antibacterial Even the CBS news show '48 Hours' had a special years ago with Heloise reporting on tests from The Good Housekeeping Institute that showed this

Milks & Supplements That We Want Given To Our Boys:

The sensitive stomach of our eldest son Wenceslao Adonis Gonzalez III and his inability to drink whole cow's milk, or even at times cow's milk in liquid form, is already a well known fact. This tendency is hereditary, and does not in any way signify that he was not healthy prior to his removal. He was always a very healthy boy with a sensitive stomach. His grandfather had the same problem and lived to be 96 years old without the advantages of healthier organic food such as our son was consuming. So there is no reason to think that Wencito (as we call him) cannot have a long healthy life, as long as he eats a healthy organic diet. We knew what to give him and what not to give him, and as a result did not encounter any difficulties. Since both of our sons are together and the food that will be bought will be for the both of them, we do not wish for any whole cow's milk to be purchased for them because of Wencito's sensitivity to it. We do not wish for them to be given butter, for it can make Wencito sick, and it is not especially healthy for Galileo either. We do not wish our sons to be given any soymilks AT ALL!

It is very difficult to completely avoid soy as it is in so many products (even organic ones), however by not giving our sons any products made specifically out of soy, their exposure to it can be greatly lessened. The reason for our desire to reduce our children's exposure to soy is the well documented fact that soy in excess quantities can be hazardous to one's health, especially when it is non-organic soy which is almost always genetically engineered. Soy (when it is not organic) is one of the main four crops that are almost always genetically modified (soy, corn, canola, and peanuts). Even if the soy is organic, consuming it in excess can lead to certain health problems. As a matter of fact, in 2005 the Israeli Health Ministry issued a public warning against the consumption of soy in children and infants. Even day care centers and schools were strongly advised to strictly limit the amount of soy products served to children.



Excess soy consumption has been linked to hyperthyroidism which is caused when the thyroid gland makes too much thyroid hormone, resulting in fatigue and other more severe symptoms.

The thyroid gland produces the hormones thyroxine (T4) and triiodothyronine (T3), which control the way every cell in the body uses energy.

In 1991, Japanese researchers reported that consumption of as little as 30 grams or two tablespoons of soybeans per day for only one month resulted in a significant increase in thyroid-stimulating hormone. The isoflavones in soy that are proclaimed by many to be it's curative component , unfortunately undergoes a biological change when the soy is processed. These altered isoflavones are, according to recent research, carcinogenic.

Some of the conditions caused by excess soy consumption (right).

Hundreds of epidemiological, clinical and laboratory studies link soy to:

- Malnutrition
- Digestive distress
- Thyroid dysfunction
- Cognitive decline
- Reproductive disorders
- Infertility
- Birth defects
- Immune system breakdown
- Heart disease
- Cancer

A 2008 study found that men who consume an average of half a portion of soy products per day are more likely to have a lower concentration of sperm .The study found a decreasing trend in sperm concentration correlated with the amount of isoflavones consumed as part of a soy rich diet.

The report that speaks of the Israeli Health Ministry's public warning against excess soy, and which has been included in this nutrition report, may be found at:

http://www.wholesoystory.com/newsletters/IsraelSOYadvisory.pdf

So what about the Asian countries that have been using it all along according to testimonials? It turns out that traditional soy consumption in Asian society has been greatly exaggerated in order to market soy products. First it is important to state that small quantities of organic unprocessed soy does not seem to be that harmful.

The problem is when the soy is processed, and also the fact that most non-organic soy is genetically modified. In traditional Asian cultures, only whole soy products are consumed, and much of the time the soy is in a fermented form, among which are included Miso, Tempeh, and Tofu, and Natto. However, modern soy products are not the same as those fermented, and naturally processed whole soy dishes that traditional Asian societies only consumed with moderation once in a while. Our non-organic soy products are not only genetically modified (as has already been stated), but are treated with dangerous chemicals, and are processed in a totally unnatural way which does not reflect the way that the food is naturally.

Contrary to popular thought, soy milk was not even drunk by the Japanese until the 1970's, when it started to be advertised as an energy drink for stressed out workers and business people. The Chinese did not traditionally value soy milk, and only used it as a step in the tofu making process.

Tofu is a Japanese word that first appeared in 1182, but tofu also was known by other names in early China : li ch'i and shu. One must also bear in mind that the processes which the ancient Chinese and Japanese used to create soy products (like tofu) were quite different from the synthetic processes of nowadays. In Japan, as well as in China, tofu was rarely served as a main meal anywhere , except in Buddhist monasteries. It's most popular use was, and mostly continues to be, as a few bland little blocks in miso soup or fish stock, though the modern advertisement of soy products (initiated by Westerners) within Asian countries has led to the consumption of soy products that traditionally were not consumed before. The Chinese almost never ate boiled or baked soybeans, nor cooked with soy flour except in times of famine when there was no other option. Modern soy products such as

soy protein isolate (SPI), TVP, soy-protein concentrate, and other soy-protein products that are made using high-tech industrial processes, were unknown in Asia until after World War II.

Natto is typically eaten on rice

Soybeans were first introduced into Europe in the 1700's and in the American colonies in 1765. It was used as animal feed, and was not really consumed. Benjamin Franklin in 1770 mentions soybeans in a letter that he wrote from England. In the letter he says that he is sending soybeans home from England.

It was not until 1910 that soybeans became an important crop in the U.S. , and it was not until the 1920s that it started to widely be used as a food product.

(View Wikipedia article screenshot below)

Soybeans were a crucial crop in eastern Asia long before written records.[citation needed] They remain a major crop in China, Japan, and Korea. Prior to (FAO)[1] fermented products such as Soy sauce, tempeh, natto, and miso, soy was considered sacred for its use in crop rotation as a method of fixing nitrogen. The plants would be plowed under to clear the field for food crops.[citation needed] Soy was first introduced to Europe in the early 1700s and what is now the United States in 1765, where it was first grown for hay. Benjamin Franklin wrote a letter in 1770 mentioning sending soybeans home from England. Soybeans did not become an important crop outside of Asia until about 1910. In America, soy was considered an industrial product only and not used as a food prior to the 1920s. Soy was introduced to Africa from China in the late 19th Century and is now widespread across the continent

Given all the scientific evidence that exists on the potential hazards of excessive soy consumption, and the availability of other healthier alternative non-dairy drinks, it is not wise to allow children to consume soymilk, or products that are primarily made out of soy. The chart shown on the right compares soymilk to cow's milk. While soymilk does have more iron than milk, as well as more protein, it does not have more calcium. Children and older people need extra calcium in their diets, children to grow strong bones, and older adults to prevent osteoporosis. Calcium does more than just build strong bones,

	Regular Soymilk	Lite Soymilk (reduced fat)	Whole cow milk	Fat-free cow milk
Calories (g)	140	100	149	83
Protein (g)	10.0	4.0	7.7	8.3
Fat (g)	4.0	2.0	8.0	0.2
Carbohydrate (g)	14.0	16.0	11.7	12.2
Lactose (g)	0.0	0.0	11.0	12.5
Sodium (mg)	120	100	105	103
Iron (mg)	1.8	0.6	0.07	0.07
Riboflavin (mg)	0.1	11.0	0.412	0.446
Calcium (mg)	80.0	80.0	276	299

it helps to regulate the nutrients that pass through the cell's walls, so it is vital for the functioning of each cell. Later on in this report we will mention several types of fruits and vegetables that contain calcium, and that are superior options to soy.

Soymilk does seem to be a good source of vitamin E. However, the vitamin E found in soymilk can be obtained in other less hazardous foods such as almonds. As a matter of fact, we used to give our sons almond milk, and continue to give them this nutritious drink on our visits with them. Almond milk is an infinitely superior drink when compared to soymilk, and it truly has a long history of safe consumption, dating all the way back to Biblical times. Almond milk was also during the Middle Ages a staple in everyday cooking throughout most of Europe. The almond is originally a native of Morocco and has been cultivated since ancient times. It's cultivation eventually spread into other parts of Africa, Syria, Biblical Israel, India, and Europe, and even into the New World with European colonization. The Ancient Romans called it "the Greek nut", and the almond was commonly used by ancient Egyptians in the production of bread.

Almond Milk , go to: http://www.godecookery.com/goderec/grec31.htm

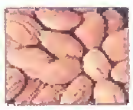
Today almonds still continue to be cultivated in the areas shown on the map below:

Soybean cultivation has caused many environmental problems around the world. In Brazil, soybean cultivation has led to the destruction of huge areas of the Amazon forest (an invaluable source of potential natural medicines), and the demand for industrial scale soybean production is threatening to cause

further deforestation. Genetically modified soybeans also pose the new yet severe threat of genetic pollution which many scientists think may have irreversible consequences. Almond trees have not contributed to deforestation and environmental problems as soybean cultivation has , though there has been much controversy on the pasteurization of raw almonds (which took effect in 2007), as well as on the fumigation of some non-organic almond trees, among well informed and conscientious consumers. Nevertheless, almonds are far more benign for the environment on an industrial scale, and more nutritious than soybeans. We saw many almond trees in Mallorca, Spain and they seem to merge with the natural landscape without being detrimental to it.

Almond tree with ripening fruit. Majorca, Spain.

Almonds	1 ounce (23 whole nuts) of raw almonds contains 6.02 grams protein, 163 calories and 3.5 grams of dietary fiber.	Potassium - 200 mg Phosphorus - 137 mg Calcium - 75 mg Magnesium - 76 mg Iron - 1.05 mg Selenium - 0.7 mcg Zinc - 0.87 mg Manganese - 0.648 mg Copper - 0.282 mg Also contains a small amount of other minerals.



Almonds are probably even more rich in vitamins than soybeans, and are rich in fiber, protein, Vitamin E, and other high quality nutrients(as shown in the graph on this page). We believe that they are richer in calcium than soybeans (though that is perhaps not instantly evident from the nutritional data provided on this page, which is why we have included a second chart to illustrate almonds' calcium content on the following page).

		Vitamin B1 (thiamine) - 0.06 mg Vitamin B2 (riboflavin) - 0.287 mg Niacin - 0.96 mg Folate - 14 mcg Pantothenic Acid - 0.133 mg Vitamin B6 - 0.041 mg Vitamin E - 7.43 mg Contains some other vitamins in small amounts.

Almonds*

Food Value	Minerals and Vitamins
Moisture - 5.2%	Calcium - 230 mg
Protein - 20.8%	Phosphorus - 490 mg
Fat - 58.9%	Iron - 4.5 mg
Fibre - 1.7%	Niacin - 4.4 mg
Minerals - 2.9%	Small amount of Vitamin B Complex
Carbohydrates - 10.5%	Calorific Value - 665
* Values per 100 gm's edible portion	

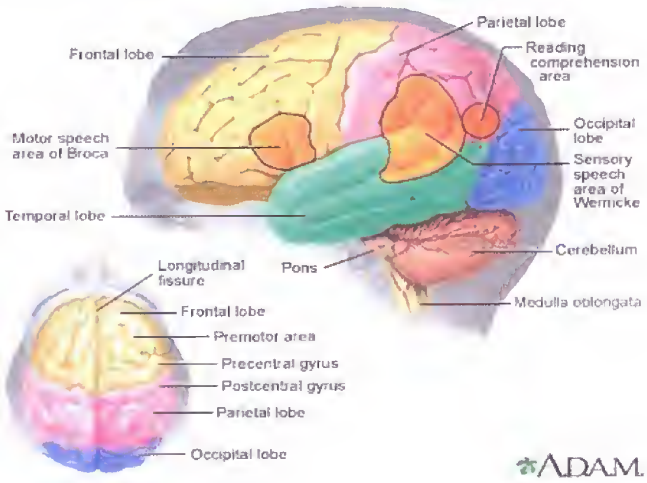
The nutritional data provided above is per 100 grams of almonds which equals to 3.5 ounces (or rounded to the nearest ounce it would be 4 ounces). To make two cups of almond milk one requires one cup of ground almonds which would be 3.5 ounces. Since according to the chart above 3.5 ounces (or 100 grams) have 230 mg of calcium, one cup of fully prepared almond milk would have half of that amount (because it is diluted into 2 cups of water). Therefore one cup of fully prepared almond milk would have 115 mg of calcium, which although somewhat less than cow's milk, is still a greater amount than that of the 80 mg of calcium than one can obtain from soymilk(as shown on the graph on page 30), with the added bonus of several nutrients that neither soymilk nor cow's milk has. Two cups of almond milk however, would almost equal the 279 mg and 299mg dosages of calcium found in cow's milk. The iron content of one cup of almond milk at 2.25 mg (half of the 4.5 mg in 100 grams of almonds) would easily surpass the meager amounts of 0.07 mg found in milk, and the 1.8 mg found in soymilk (see graph on page 30). Children need about 10 mg of iron a day, so organic almond milk would be a good beverage for a child to drink in addition to organic milk. Almonds are good for diabetics, have been said to lower cholesterol, prevent cancer, improve the complexion, and help to move food more easily through the colon.

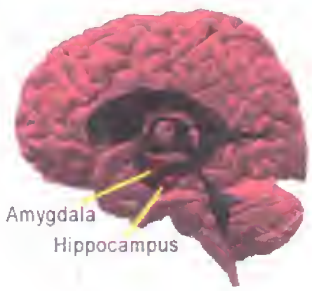
One Cup of ..	Weight in Ounces
Almonds (ground)	3½
Almonds (whole)	5

In traditional Indian medicine (called Ayurvedic medicine) almonds have long been considered a nutritive for the brain and the nervous system, and is said to contribute greatly to intellectual longevity . This most likely is due to the fact that almonds are a good source of zinc, iron, and vitamin E: all needed for optimum brain function and cognitive development (view chart on page 32). Surely when considering what to feed a child, one must consider their nutritional needs, and how best to meet those needs in the safest and most efficient way, especially in a world where high-tech processing usually equates low quality and nutritionally devoid food, that does the body more harm than good.

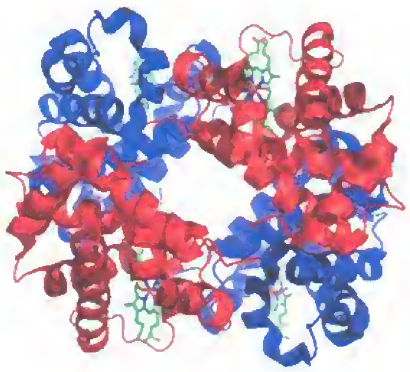
The screenshot below from a report made for the University of Cincinnati titled: "Polyunsaturated Fatty Acids in the Human Diet: Implications for Cognition, Mood, and Neural Development" illustrates this very vital concept in child nutrition.

Deficiencies in early nutrition can lead to developmental dysfunction, disease, and decreased cognitive performance in later life (Dauncey and Bicknell, 1999). The hippocampus and cerebellum are important areas in which development can be easily affected by nutritional deficiencies. The hippocampus is important for memory processing, and the cerebellum is important for information processing (sensory, motor, cognitive) and for sending information to the other parts of the brain.





Almonds should also be considered a beneficial food for children, due to it's ability to prevent anemia, and even to treat it. Anemia occurs when there is a decrease in the quantity of red blood cells, or when there is a less than normal amount of hemoglobin in the blood. Hemoglobin is an iron-containing, oxygen transporting metallo-protein . A metallo-protein is a protein that contains a metal ion (ion meaning charged atom) cofactor (meaning a non-protein chemical compound that is bound to a protein and is required for the protein's biological activity). In the case of hemoglobin's metal ion, the metal that it contains is iron. Hemoglobin performs a vital role in maintaining the body functioning properly. Hemoglobin in the blood is responsible for transporting oxygen from the lungs to the rest of the body (to the tissues) and then releasing that oxygen for cell use. When the body does not produce enough blood hemoglobin anemia is the result. The copper, iron, and vitamins found in almonds help the body to synthesize blood hemoglobin. Hemoglobin is also found outside of the red blood cells , but it is only blood hemoglobin that performs the oxygen-carrying function.



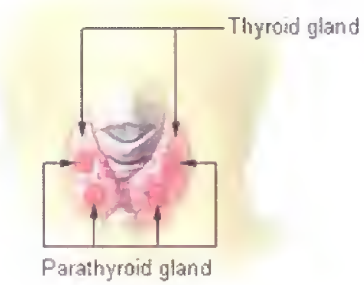
3-dimensional structure of hemoglobin, a globular protein.

Globular protein: Also called spheroprotein. It is a protein that manifests a globe-like appearance (the shape of the protein) thus it is called a globe-like protein. It is dissolvable in aqueous solutions (which means that it can be dissolved in water). Globular proteins are one of two main types of proteins. The other protein being fibrous proteins, which are not dissolvable, and are straighter in appearance (pictured to the right).

In addition to all the wonderful health benefits that have been explained, almond milk is easily digestible, and because of it's flavonoids (a fitting rival for soybeans' flavonoids called isoflavones)

they promote cardiovascular health. Flavonoids (also known as vitamin P) are organic compounds found in plants that have no direct involvement in the growth, development, or reproduction of the plant to which they pertain. In addition to the flavonoids, the abundance of potassium found in almonds also help to maintain one's heart healthy by improving heart function, while at the same time helping to maintain normal blood pressure.

Children need to obtain the maximum amount of energy from the food that they eat. A task which is made more difficult by the poor nutritional value of the food that comprises a large part of most modern children's diets. While drinking almond milk cannot aid in improving the nutritional quality of other foods that children eat, the abundant magnesium present in this nutritious beverage can help to break down whatever food the child eats into energy more efficiently. The magnesium in the almonds also help the functioning of the parathyroid glands. These glands are tiny (about the size of a grain of rice), and are located on the thyroid . Despite being on the thyroid gland's surface these tiny glands serve a completely different purpose.



The main function of these parathyroid glands is to regulate calcium levels in the body to ensure that the nervous and muscular systems can continue to function properly.

When blood calcium levels drop below a certain point, the gland releases a hormone called Parathyroid Hormone (PTH) which helps to maintain good bone health.

The hormone increases blood calcium levels ,while promoting calcium conservation (thus preventing another harmful drop in blood calcium levels), and also increase gastrointestinal calcium absorption by activating vitamin D.

Because of almond's proven benefits and rich nutritional content, we ask that our sons be given almond milk at least once a day. The brand that we prefer (and that we have given them on our visits) is that of Pacific Organic Almond milk. We ask that the milk be bought in chocolate flavor for the following two reasons: 1) They like that flavor only, and 2) medical research has shown that cocoa and dark chocolate, when consumed in reasonable quantities, have beneficial effects on one's health. Cocoa (of course we mean unprocessed and organic) such as is present in this almond milk, has strong antioxidant properties that protect the cell membranes and cell DNA from the negative effects of free radical oxidative damage. Among the other potential benefits of cocoa and dark chocolate, are a reduced risk of developing cardiovascular disease and certain cancers, as well as the lowering blood pressure, and a reduced tendency of the blood to clot.

Organic Almond Chocolate Single Serve

Nutrition Facts

Serving Size 8 fl. oz. (240 mL)
Servings Per Container

Amount Per Serving	
Calories 100	Calories from Fat 25
	% Daily Value*
Total Fat 3g	5%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Potassium 130mg	4%
Total Carbohydrate 19g	6%
Dietary Fiber 1g	4%
Sugars 16g	
Protein 1g	

Vitamin A 10%	Vitamin C 0%
Calcium 0%	Iron 0%
Vitamin D 25%	Riboflavin 30%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs

	Calories	2 000	2 500
Total Fat	Less Than	65g	80g
Saturated Fat	Less Than	20g	25g
Cholesterol	Less Than	300mg	300 mg
Sodium	Less Than	2 400mg	2 400mg
Potassium		3 500 mg	3 500 mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

INGREDIENTS

Organic Almond Base (Filtered Water, Organic Almonds)
Organic Evaporated Cane Juice
Organic Cocoa Powder
Organic Chocolate
Natural Flavor
Sea Salt
Potassium Citrate
Carrageenan
Riboflavin (B2)
Vitamin A Palmitate
Vitamin D2

SPECIAL DIETS INFO

Gluten Free, Kosher Parve, Dairy Free, Low Sodium, Low Fat, Vegan Diet.

SPECIAL DIETS REFERENCE

Cocoa health benefits

Chocolate and cocoa derive their health benefits from flavonoids which are plant pigments capable of acting as antioxidants to counteract some of the cellular damage that can lead to chronic diseases such as cancer and heart disease. Cocoa powder has also been shown to lower blood pressure and improve blood flow in humans. A cup of cocoa has almost three times the antioxidants of a cup of green tea, another drink renowned for its health benefits. With all of the antioxidant capabilities of cocoa it may seem like a no-brainer to add dark chocolate and cocoa to your diet. While cocoa is still recommended by most experts when consumed in reasonable quantities, the health benefits of cocoa should be balanced by its potential drawbacks.

This almond milk only comes in chocolate flavor when you purchase the individual sized 8 ounce containers. A package of four such containers sell for $3.99.

Feeding a child was never to us a matter of what is quicker, more convenient, or cheaper. Providing a child with good nutrition requires a willingness on the part of the parent to educate themselves, and to put the health of the child above all else. So the higher cost of organic food, or the convenience of giving them conventional foods never were factors in our decisions. Good nutrition is a science, and we always wanted to know what was going into our sons' bodies, as well as the potential impact of anything that they consumed on their health. Unfortunately most parents nowadays just buy the cheapest thing and throw it into the shopping cart, without even bothering to read the ingredients or the nutrition labels. That was never our style. Even in Spain, when we suffered economic difficulties because of the actions of our accusers, we always made sure that they continued to eat organic. We ask that the same care be given now to them, and that the foods that we are listing here be bought for them. We are not asking your agency to do something, which we ourselves would not do. If they were with us they would be eating high quality organic food. However, since against our will they are not with us, we ask that you, who are the advocates of our separation, give our sons what we would never deny them.

Good nutritious food to ensure that they remain healthy, without making cost a priority.

We ask, quite insistently, that our sons be given goat's milk for drinking (though we have no objection to them eating products made from organic cow's milk such as cheese, puddings, yogurt, etc.) because of Wencito's delicate stomach, and because we have valid reasons to believe that it will be healthier for Galileo as well (which we will explain). When we had our sons, the only milk that they drank (apart from their dairy-based Toddler Formula) was goat's milk. Twice we tried giving Wencito low-fat organic cow's milk, and he did not tolerate it too well. He did however eat other cow milk products with no difficulties. Since we gave Wencito goat's milk, we gave it to Galileo as well. Even with children that have stronger stomachs goat's milk is still healthier than cow's milk, and if we would have them with us, that is what we would be giving them to drink (apart from the Toddler Formula which serves as a useful supplement). Though the price of goat milk is higher than that of cow's milk, we ask that you give them that precisely because it is what we would do, and no one told your agency to make the very bad decision to take our kids away unlawfully with no due process. So since you insisted on having our boys, at least give them what we would give them. The fact is, that even if you give them this highly nourishing diet that we are demanding, they will still be in the hands of those who do not love them, and will still be subjected to ongoing trauma. The only difference is that with a better nutrition they will remain healthier physically, and may be able to better cope with the trauma that has been needlessly inflicted on them (nutrition does affect behavior). However if your agency persistently refuses to comply with these reasonable requests , and our children continue to suffer from a poor diet as well, you could be said to be potentially responsible for any negative effects that such a diet may cause, and poor diet for a very young child, who is living through one of the most important stages of development, can have disastrous consequences on their long-term health, as you who state to be experts on child development must already know.

These are the brands that we used to purchase for them, and which we want them to have.

Meyenberg Powdered Goat's Milk canister costs $10.99 for a 12 ounce container that contains 12 servings. To the right is a graph of the nutritional content of one 8 ounce serving.

Nutritional Information (Reconstituted)

Nutrients	Units	per 8 fl oz
Calories		144.6
Calories from Fat		70.2
Total Fat	grams	7.80
Saturated Fat	grams	4.80
Polyunsaturated Fat	grams	2.40
Monounsaturated Fat	grams	0.49
Cholesterol	milligrams	27.3
Sodium	milligrams	111.6
Total Carbohydrates	grams	10.42
Dietary Fiber	grams	-
Sugars	grams	10.42
Protein	grams	8.18
Vitamin A	I.U.	343.0
Calcium	**milligrams**	**298.0**
Vitamin D	I.U.	100.0
Folic Acid	**micrograms**	**80.0**

In percentages, a serving will have the following amounts of the nutrients listed:

Vitamin A 6%, Vitamin D3 25%, Calcium 30%, and Folic Acid 20%.

In liquid form we prefer the Meyenberg one quart of goat milk which contains 4 servings, and which sells for $3.79. The graph below shows the nutritional data for one 8 ounce serving.

Nutritional Information

Nutrients	Units	per 8 fl oz
Calories		142.0
Calories from Fat		64.8
Total Fat	grams	7.2
Saturated Fat	grams	4.40
Polyunsaturated Fat	grams	2.20
Monounsaturated Fat	grams	0.43
Cholesterol	milligrams	25.2
Sodium	milligrams	115.2
Total Carbohydrates	grams	10.75
Dietary Fiber	grams	-
Sugars	grams	10.75
Protein	grams	8.45
Vitamin A	I.U.	316.0
Calcium	**milligrams**	**307.0**
Vitamin D	I.U.	100.0

This milk contains the following percentages of the nutrients mentioned per serving:

Vitamin A 6%, Calcium 30%, Vitamin D 25%.

For chocolate goat's milk in portable containers for on the go, we prefer this brand. We used to give this milk to our boys, and they LOVED it!

Oak Knoll Chocolate Goat's Milk Pint container for $2.39.

Who we are.

Oak Knoll Dairy Farm is Vermont's only Grade A commercial dairy bottling goats' milk. The 160 acre farm on the banks of the Connecticut River, has been conserved since 1998 with the Upper Valley Land Trust, a non-profit agency that preserves farmland, forests and wetland in the Connecticut River Valley. Oak Knoll Dairy is owned and managed by George Redick and Karen Lindbo, a husband and wife team. While our operation is not "Certified Organic", most of our practices are including using non GMO seed for our crops

This is a very nice farm in Vermont owned by a couple who grow their own goat feed (GMO free), and have very clean, animal-friendly premises that look after the well being of their cute, and very noticeably happy goats. They are a dairy farm dedicated only to goat's milk, and (apart from their pet dog) have no other animals but goats.

This milk contains the percentages of the following nutrients mentioned per serving: Vitamin A 6%, Vitamin C 3% (their good feed gives their milk a little vitamin C) , and Calcium 30%.

Oak Knoll Dairy Chocolate Goats' Milk
Serving Size: 16 fluid ounces (2 servings per container)
Calories: 210
Total Fat: 8 g
Cholesterol: 25 mg
Sugars: 27 g
Protein: 8 g

Our sons can drink goat milk from either of these two brands. We want them to have one serving of goat's milk a day (either of the brands mentioned) and one serving of almond milk a day. This pint shown above would give both of our boys their daily goat milk ration.

The reasons why we want BOTH of our sons to drink goat milk are the following:

1) Goat's milk on the whole is more easily digestible, and way less allergenic than cow's milk.

Goat Milk

One cup of goat milk contains 8.69 grams of protein, 168 calories and 10.1 grams of fat.

Potassium - 498 mg
Phosphorus - 271 mg
Calcium - 327 mg
Magnesium - 34 mg
Iron - 0.12 mg
Sodium - 122 mg
Manganese - 0.044 mg
Zinc - 0.73 mg
Copper - 0.112 mg
Selenium - 3.4 mcg
Also contains trace amounts of other minerals.

2) Goat's milk is more nutritious than cow's milk while being more gentle on the stomach.

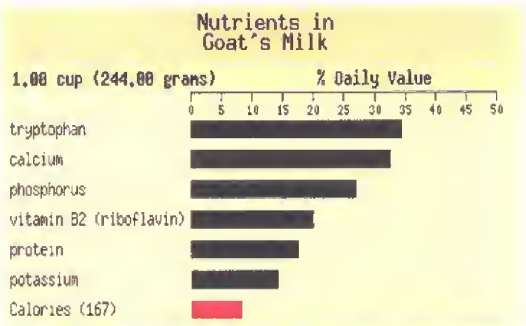
Goat's milk contains 13 % more calcium, 25 % more vitamin B6, 47 % more vitamin A, 134 % more potassium, and three times more niacin(vitamin B3). Goat's milk is also four times higher in copper, and contains 27 % more of the antioxidant selenium than what can be found in cow's milk. Selenium, it should be noted, has the ability to boost the immune system, and also maintains proper function of the thyroid gland (something which excess soy consumption puts in jeopardy, remember hyperthyroidism, on page 28). The vitamin A found in cow's milk partly consists of carotenoids (beta-carotene), which the body has to convert into vitamin A. The Vitamin A in goat's milk is already pre-formed(called retinol), so that the body can use it instantly to make other forms of vitamin A, such as retinal, or retinoic acid. As was also mentioned with almond milk on page 36 of this nutrition report, goat's milk's richness in potassium helps to promote healthy heart function and maintain normal blood pressure.

Vitamin C - 3.2 mg
Vitamin B1 (thiamine) - 0.117 mg
Vitamin B2 (riboflavin) - 0.337 mg
Niacin - 0.676 mg
Pantothenic Acid - 0.756 mg
Vitamin B6 - 0.112 mg
Folate - 2 mcg
Vitamin B12 - 0.17 mcg
Vitamin A - 483 IU
Vitamin E - 0.17 mg
Vitamin K - 0.7 mcg
Contains some other vitamins in small amounts.

Nutrient Comparison: Goat's Milk and Cow's Milk

	Goat's Milk	Cow's Milk		Goat's Milk	Cow's Milk
Weight (g)	244	244	Calories	168	150
Water (g)	212.4	214.7	Protein (g)	8.7	8
Carbohydrate (g)	10.9	11.4	Fat (g)	10.1	8.2
Monounsaturated Fatty Acids (g)	2.7	-	Saturated Fatty Acids	6.5	5.1
Polyunsaturated Fatty Acids	0.4	0.3	Cholesterol (mg)	28	33
A (IU)	451	307	B-1 (mg)	0.12	0.09
B-2 (mg)	0.34	0.4	B-6 (mg)	0.11	0.1
Folic Acid (mcg)	0.7	12	Nicotinic Acid (mg)	0.7	0.2
B-12 (mcg)	0.16	0.87	Pantothentic Acid (mg)	0.76	0.77
C (mg)	3	2	Sodium (mg)	122	119
Calcium (mg)	326	290	Magnesium (mg)	34	33
Manganese (mg)	0.044	0	Zinc (mg)	0.73	0.93
Potassium (mg)	499	368	Phosphorus (mg)	270	227
Iron (mg)	0.12	0.12	Copper (mg)	0.112	0

While it is true that cow's milk contains five times more vitamin B12 than goat's milk, and ten times more folic acid, an overall analysis of goat's milk would still reveal it's obvious superiority over cow's milk. Goat's milk can be fortified with Folic Acid, or the child can obtain it from other natural sources such as avocado, mango, oranges, or broccoli. Children need energy, and goat's milk provides it. It is rich in Riboflavin (vitamin B2), which plays an important role in the production of energy that is required for routine physical activity.



A careful look at the chart shown above will explain why goat's milk is superior to cow's milk. Goat's milk aids in mineral metabolism by helping to improve the metabolism of copper and iron. Paradoxically, it may also help to prevent insomnia and hyperactivity in children while at the same time giving them energy because of it's rich amount of tryptophan. Tryptophan is an essential amino acid which the body converts into serotonin. Serotonin is one of the key brain chemicals involved in regulating mood, which also influences sleep, appetite, and impulse control. Since tryptophan enhances sleep and relaxation it is helpful in preventing hyperactivity in children. It is also necessary for the production of niacin (vitamin B3)

which is a vitamin that assists in the functioning of the digestive system, skin, and nerves, and is also important in the conversion of food into energy.

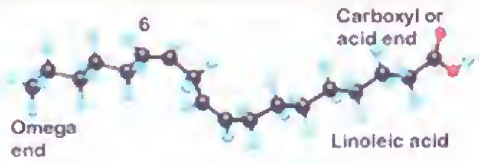
Goat's milk
1.00 cup
244.00 grams
167.90 calories

Nutrient	Amount	DV (%)	Nutrient Density	World's Healthiest Foods Rating
tryptophan	0.11 g	34.4	3.7	very good
calcium	325.74 mg	32.6	3.5	very good
phosphorus	270.11 mg	27.0	2.9	good
vitamin B2 (riboflavin)	0.34 mg	20.0	2.1	good
protein	8.69 g	17.4	1.9	good
potassium	498.74 mg	14.2	1.5	good

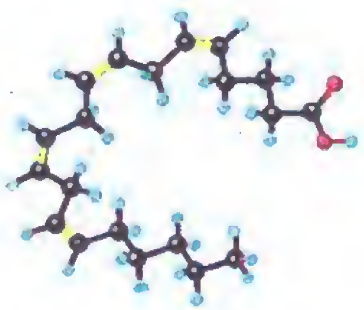
World's Healthiest Foods Rating	Rule
excellent	DV>=75% OR Density>=7.6 AND DV>=10%
very good	DV>=50% OR Density>=3.4 AND DV>=5%
good	DV>=25% OR Density>=1.5 AND DV>=2.5%

Goat's milk contains more of the essential fatty acids linoleic and arachnodonic acids than cow's milk. Linoleic and arachnodonic acids are Omega- 6 fatty acids. Both Omega-3 and Omega-6 fatty acids are classified as polyunsaturated fatty acids (look at the graph on pg 43 to see how goat's milk has more of these acids).

So What Do They Do?



Linoleic acid (left) helps to maintain the skin healthy by increasing it's ability to block harmful substances from penetrating it, while permitting water to escape. It also can be quickly burned to provide energy, or can be stored in the adipose tissues when amounts of this acid greatly exceed the quantity needed by the body. Adipose is a tissue found mostly under the skin (but also around internal organs), whose main role is to store energy in the form of fat.



Arachnodonic acid (right) is essential for fetal and infant development. It may act within the body's cells, or can be converted into highly active substances that are involved in immune reactions, blood clotting, hormone responses, the transmission of nerve signals, and communication within and between cells.

More Goat Milk Benefits

3) Goat's milk is extremely easy to digest and even most people who suffer from lactose intolerance drink goat milk or consume goat-milk products with no problems. In part this is due to the fact that goat's milk contains less lactose that cow's milk, (4.1% while cow's milk has 4.7%), however other factors may also better explain it's extreme digestibility. Goat's milk only contains trace amounts of alpha-S1, which is an allergenic casein protein found in cow's milk. Goat milk casein is actually more similar to human milk. Other similarities between goat's milk and human milk are further illustrated in the graph to your left. It seems that those who have stated that goat's milk is the closest thing to being breastfed may be right. The protein molecules in goat's milk are smaller, and are different from that of cow's milk. Goat's milk protein forms a softer curd. Curd is the term given to the protein clumps that are formed by the action of the acid that is in your stomach. This protein is way easier to digest.

Component	Action	Breast Milk	Goat's Milk Products	Retail Cow's Milk
B Lymphocytes	Produce antibodies, which target harmful microbes	X	X	-
Macrophages	Immune cells, which kill microbes in baby's gut; produce lysosome, an enzyme, which digests the cell walls of harmful bacteria, and activate other components of the immune system	X	X	-
Neutrophils	White blood cells, which ingest bacteria in baby's digestive system	X	X	-
T Lymphocytes	Kill infected cells directly or send out "alarms", which stimulate other parts of the immune system	X	X	-
IgA/IgG Secretory Antibodies	Prevent microbes in the intestine from invading other tissues	X	X	-
B-12 Binding protein	Reduces vitamin B-12 in the colon; a vitamin, which harmful bacteria need for growth	X	X	-
Bifidus factor	Promotes growth of Lactobacillus bifidus>, a helpful bacterium in baby's gut, which helps crowd out dangerous germs	X	X	-
Fatty Acids	Disrupt membranes of viruses and destroy them	X	X	X
Fibronectin	Increases antimicrobial activity of macrophages and helps to repair damaged tissues	X	X	-
Gamma-Interferon	Enhances antimicrobial activity of macrophages and helps to repair damaged tissues	X	X	-
Lactoferrin	Binds to iron, making it unavailable for germs	X	X	-

Component	Action	Breast Milk	Goat's Milk Products	Retail Cow's Milk
Lysozyme	Kills germs by disrupting their cell walls	X	X	-
Mucins & Oligosaccharides	Bind to bacteria and viruses, preventing them from attaching to baby's gut; encourage growth of friendly bacteria	X	X	X
Hormones & Growth Factors	Stimulate baby's digestive tract to mature and seal itself, reducing risk of infection	X	X	X

Note: Hormones & growth factors (on the chart left) are not referring to synthetic GMO hormones that are given to some animals. It refers to naturally occurring hormones that are present in the milk, just like there are hormones in human milk.

The fat molecules of goat's milk are smaller as well, as they are one-fifth the size of cow's milk fat molecules. This is because goat's milk does not contain agglutinin as cow milk does. Agglutinin is a substance that causes particles to coagulate and to form a thickened mass, and so it works by making particles bind together. Because goat's milk does not have agglutinin, the fat globules (small spherical mass) in it's milk do not cluster together, thus making them easier to digest. These smaller fat globules also prevent cream separation in goat's milk, giving it it's creamier texture. Rapid digestion of goat's milk is due to the higher amount of short-chain and middle-fatty acids that are present in it's composition, and which surpass those of cow's milk. Short and medium- chain fatty acids are absorbed quickly and directly into the blood through the intestine capillaries (capillaries are the smallest of blood vessels), whereas long-chain fatty acids are too large to be directly released into the tiny intestine capillaries.

	Goat	Cow	Human
Protein %	3.0	3.0	1.1
Fat %	3.8	3.6	4.0
Calories/100 ml	70	69	68
Vitamin A (i.u./gram fat)	39	21	32
Vitamin B1/thiamin (µg/100 ml)	68	45	17
Riboflavin (µg/100 ml)	210	159	26
Vitamin C (mg ascorbic acid/100 ml)	2	2	3
Vitamin D (i.u./gram fat)	0.7	0.7	0.3
Calcium %	0.19	0.18	0.04
Iron %	0.07	0.06	0.2
Phosphorus %	0.27	0.23	0.06
Cholesterol (mg/100 ml)	12	15	20

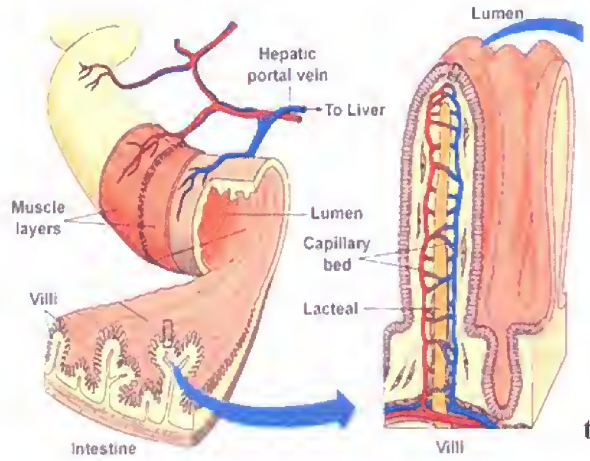
References

• Droese, Karyl, April 1990. "Nutritional Composition of Goat Milk Products in the U.S." *Dairy Goat Journal*

• Pennington, Jean A.T., and Helen Nichols Church, 1985. Bowes and Church Food Values of Portions Commonly Used. J.B. Lippincott, Philadelphia.

• Renner, Edmund, 1983. Milk and Dairy Products in Human Nutrition. W.G. Mott University of Giessen, Munich, Germany.

• Used by permission from the American Dairy Goat Association website: www.adga.org



Instead they have to be absorbed in the fatty walls of the intestine called villi, where they are reassembled again as triglycerides (a type of fat found in the blood that the body uses for energy). This process of converting long-chain fatty acids into triglycerides takes longer than the rapid absorption that occurs with short and medium-chain fatty acids.

Among the medium-chain fatty acids that are present in goat's milk are caprylic and capric acids, which apart from it's easy digestibility, also imparts to the milk an anti-microbial quality that is simply not present in cow's milk.

Caprylic acid (shown to the right), just like capric acid and caproic acid, is named after goats (from the Latin word for goat: Capra).

All three of these acids make up 15% of goat milk fat. They are naturally found in the milk of some mammals, and are found in coconut oil and palm kernel oil as well.

Caprylic acid (also known as Octanoic acid) has antiviral and antibacterial properties, however it is best known as a potent anti-fungal.

Caprylic acid is also used in the treatment of some bacterial infections. Due to its relatively short chain length it has no difficulty in penetrating fatty cell wall membranes, hence its effectiveness in combating certain lipid-coated bacteria, such as *Staphylococcus aureus* and various species of *Streptococcus*.[4]

Though cow's milk also contains caprylic acid, goat's milk has twice the amount. As these acids are highly anti-microbial they protect the body from many diseases.

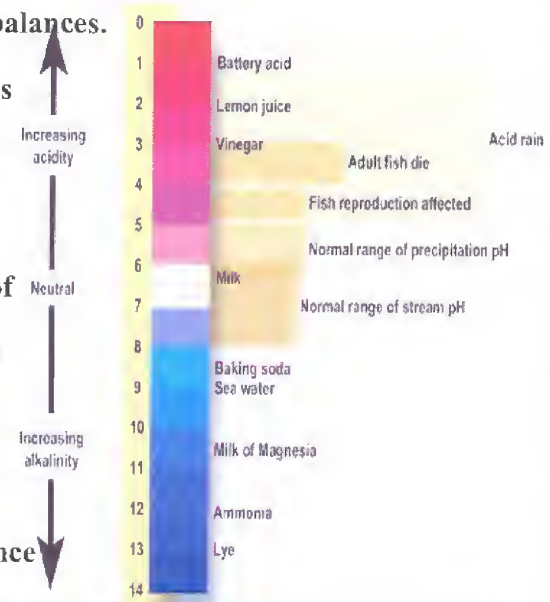
The bioactive (bioactive meaning the ability have an effect on living tissues) components in goat's milk protects the health of the person consuming it by retarding the growth of harmful organisms.

In Biblical Times, goat's milk was the milk of choice, and

was widely consumed as the following Biblical passage shows:

"You shall have enough goats' milk for your food, for the food of your household, and the nourishment of your maidservants" (Proverbs 27:27)

4)Goat's milk has an alkaline pH, so it does not produce acid in the blood or in the intestinal system. It serves as an alkalinizer, by increasing the pH in the blood stream . This helps to keep the body healthy because acidic blood and intestinal pH levels are associated with fatigue, headaches, muscle aches and pains, sore pressure points, excess weight, and blood sugar imbalances. The reason for goat's milk's alkalinizing effect is the abundant presence of an amino acid called L-glutamine. This acid does more than maintain a pH balance in the body, when it is converted into glutamic acid in the



WHAT IS pH ?

pH stands for "potential hydrogen". It is a system used to measure on a scale (from 0 to 14) how much acidity or alkaline (non-acidity) is present in a substance. 0 would be the highest concentration of acid, whereas 14 would be the most alkaline (non-acidic). 7 is pH neutral because it signifies that there is a balance between acid and alkaline in the substance measured.

So what does hydrogen have to do with all this? Simple. If an environment is too acidic it will not attract enough hydrogen, if it is too alkaline it will attract too much hydrogen.

brain it assists in essential brain functions, and increases the level of gamma-aminobutyric acid (also known as GABA) which is vital for brain functioning and mental activity.

L- Glutamine is the most important component of muscle protein, so that it helps to build and repair muscle. Additional benefits of this amino acid can be found on the screenshot shown at left. The benefits of goat's milk do not stop there, but seem to keep on showing how positive it's impact can be on multiple areas of bodily function. It is precisely to show the extremely valid grounds for our insistence on frequent goat milk consumption for our sons, that we will continue to state several more amazing benefits that can be derived from this highly nutritious and mild beverage.

Here's a list of Glutamine Benefits:

- Glutamine has been linked to protein synthesis. It prevents your muscle from being catabolized (eaten up) in order to provide Glutamine for other cells in the body.
- Glutamine helps maintain cell volume and hydration, speeding up wound and burn healing and recovery.
- Glutamine benefits you by replenishing declining Glutamine levels during intense workouts.
- Research has shown Glutamine can help you produce growth hormone levels. A study have shown 2 grams of L-Glutamine increased growth hormones by over 400%.
- Glutamine may serve to boost your immune system. For bodybuilders, this is important since heavy workouts tend to greatly deplete Glutamine levels. (Glutamine is a primary energy source for your immune system.)
- Glutamine is one of the most important nutrients for your intestines. It has the ability to 'repair a leaky gut' by maintaining the structural integrity of the bowels.
- Bet you didn't know this: It can even cure ulcers! Studies have found that 1.6 grams of Glutamine a day had a 92% cure rate in 4 weeks.

Goat's milk has more buffering capacity than over the counter antacids. (The USDA and Prairie View A&M University in Texas have confirmed that goat's milk has more acid-buffering capacity than cow's milk, soy infant formula, and nonprescription antacid drugs.) (Note: This writing in purple is a screenshot)

Goat's milk contains short-chain sugar molecules that are known as oligosaccharides. Studies in Spain have shown that these sugar molecules actually have anti-inflammatory properties. A copy of this study is included in our report, but can also be found at the Journal of Nutrition (go here): http://jn.nutrition.org/cgi/content/abstract/136/3/672

JN THE JOURNAL OF NUTRITION

HOME | CURRENT ISSUE | EMAIL ALERTS | ARCHIVES | SUBSCRIPTIONS | SEARCH FOR ARTICLES

Nutritional Immunology

Goat Milk Oligosaccharides Are Anti-Inflammatory in Rats with Hapten-Induced Colitis[1]

Abdelali Daddaoua*, Victor Puerta*, Pilar Requena*, Antonio Martínez-Férez‡, Emilia Guadix†, Fermín Sánchez de Medina**, Antonio Zarzuelo**, María Dolores Suárez*, Julio José Boza‡ and Olga Martínez-Augustin*[2]

* Departments of Biochemistry and Molecular Biology II, ** Pharmacology and † Chemical Engineering, University of Granada, Spain and ‡ Puleva Biotech S.A., Granada, Spain

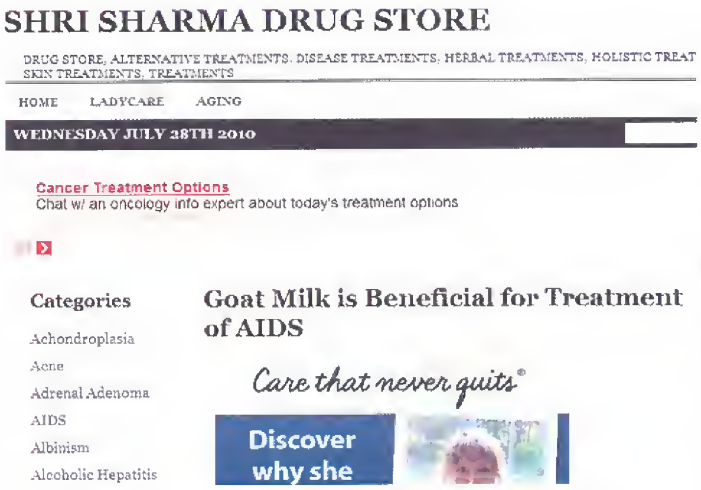
There is also the following link (also included in this report) that confirms many of the health benefits stated in this report that are associated with goat's milk consumption: (on the next page)

http://www.conwayfamilyfarm.com/Adobe/Goat%20Milk%20Science%20Information.pdf

As more research is done, new possibilities for promoting health through nutritious and high quality foods is taking on a realism which had only remained invisible to modern society due to their own willing ignorance to see the inevitable connection between diet and health. With goat's milk, as well as with other highly nourishing foods, the veil is falling, and their merit within the science of nutrition is slowly being recognized. On page 47 of this report we spoke of caprylic acid, the medium-chain fatty acid present in goat's milk as well as in coconut oil, and which has anti-microbial and anti-viral properties. The screenshot below is from a site explaining how research shows that caprylic acid appears to be useful in combating AIDS. It mentions coconut oil because that food also contains this acid.

Antiviral

In his book "The Coconut Oil Miracle," naturopath Bruce Fife states that the medium-chain fatty acids found in coconut oil (caprylic acid is one of these, along with lauric and capric acid) have been shown to work against a wide range of viruses. Fife cites research that shows these acids to be effective in battling the viruses that cause influenza, herpes, hepatitis C, measles and mononucleosis. These acids even appear to work in combating the AIDS virus.



However, research has shown that goat's milk, because of it's high caprylic acid content, and also obviously because of it's richness in selenium (an antioxidant mineral that boosts the immune system, see page 42 of this report) has proved beneficial in the treatment of AIDS.

Seeing all this, it does not require a great leap of the imagination to realize that if goat's milk can prove helpful for those who have severely compromised immune systems, it should do wonders for fairly healthy children. With regard to children consuming goat's milk, we have explained in detail how extremely easy it is to digest. A factor which must be taken account, even in the case of children with more resilient stomachs, so all the more so in Wencito's ease. We want both of our sons to benefit from the varied and extremely beneficial properties that goat's milk throughout it's long history of consumption has imparted to those who have drunk it daily. It would prevent any potential discomfort for our eldest son if he would drink milk that not only is easier to digest, but that also appears to soothe the digestive tract. As a matter of fact, a Dr. Bernard Jensen (1908-2001), a California chiropractor who became a pioneer in holistic medicine, and went on to write over forty books, did a study which showed that a baby's stomach can digest goat's milk within 20 minutes, while cow's milk takes 8 hours to digest! Where the study first appeared is shown below.

One of the greatest healers the world has ever known.

Dr. Jensen spent over 60 years as a pioneer in the holistic health field, helping to pave the way for the alternative health revolution that we are now experiencing.

Dr. Jensen began his career at the West Coast Chiropractic College where Bernard became the youngest Doctor in the state of California. He then began an intensive study of Iridology. He traveled extensively in search of health knowledge, a search that led him to over 65 countries to observe the lifestyles of the people and their various ways of eating. Each place provided a different health secret.

Following the path of the great nature cure practitioners, Dr. Jensen operated his own health sanitariums in Altadena and Escondido California for over 40 years.

People in search of health and rejuvenation came from all over the world to his Hidden Valley Health Ranch in Escondido, to learn the principles he believed in and taught.

Over the years, Dr. Jensen received several awards, and degrees from all over the globe. Some highlights were, in 1953 he was the recipient of the Ignantz Von Peczely International Iridology Gold medal award in San Remo, Italy. In 1982 he received the National health Federation's Pioneer Doctor of the Year award. He was awarded the Pax Mundi Award for World Peace in 1984.

Throughout his career, Dr. Jensen wrote and published over 40 books. In 1952, he published, The Science and practice of Iridology, Volume 1, which quickly became a classic in the field and established him as one of the world's top authorities on the subject. His second volume has received international acclaim. Some of his other wonderful books include Chemistry of Man, Foods that Heal, and Tissue cleansing through Bowel Management.

After working with over 350,000 patients, Dr. Jensen firmly believed that nutrition is the greatest single therapy to be applied in the holistic healing arts and that "We must treat the patient, not just the disease."

ATTAIE, et al., 2000. JOURNAL OF DAIRY SCIENCE, 83:940-944 AND JENSEN, 1994. GOAT MILK MAGIC: ONE OF LIFE'S GREATEST HEALING FOODS, ESCONDIDO, CALIFORNIA

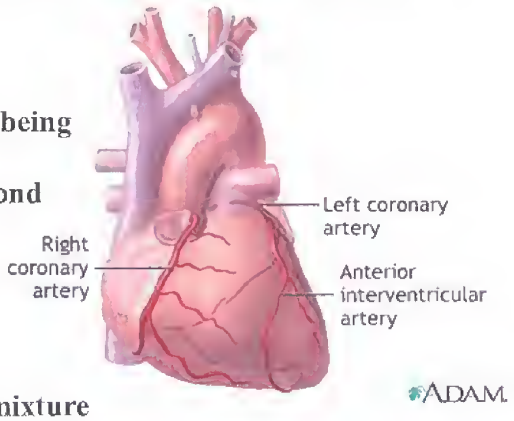
Swedish studies have shown that cow's milk protein can be a source of colic in infants, as the screenshot below shows:

Numerous small, open and double-blind studies have evaluated the effects of cow's milk or cow's milk protein in the diet of infants with colic.[8–23,47] Most (but not all) of these found an improvement in crying when cow's milk protein was removed from the diet of formula-fed infants, or from the diet of the mothers in breast-fed infants.[24–31]

This info can be seen in a report on colic by the Swedish Medical Center found in the following link:

http://healthlibrary.epnet.com/GetContent.aspx?token=af362d97-4f80-4453-a175-02cc6220a387&chunkiid=21576

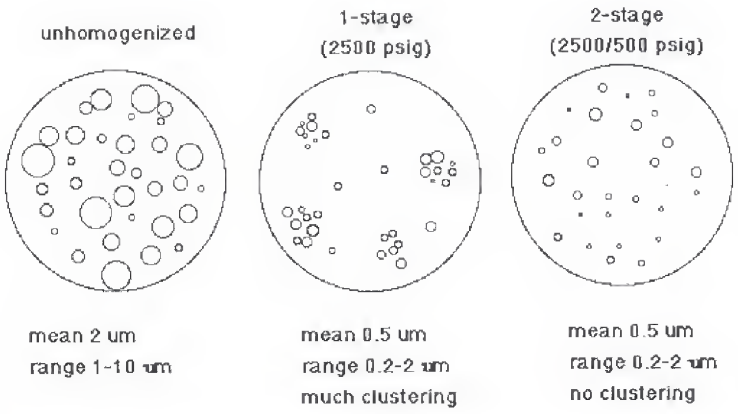
5) Another important advantage that goat's milk has over cow's milk is that it is naturally homogenized, and as such does not need to be subjected to mechanical homogenization which can possibly cause damage to the arteries.



Milk by nature is an oil in water emulsion (emulsion being the suspension of small globules of one liquid in a second liquid, with which the first will not mix. A globule is a small spherical mass, especially a small drop of liquid). One of the best examples of emulsions is the mixture of oil and vinegar. When unhomogenized milk is left standing, the high fat cream layer separates from the watery low fat layer. This is why the milk has to be shaken, to once again combine these two layers, as the screenshot to your left shows. The problem with mechanical homogenization is that the pressure used in the process to reduce the size of the fat globules (as well as to prevent them from clumping together), also releases an

THE BENEFITS OF "UNHOMOGENIZED" MILK

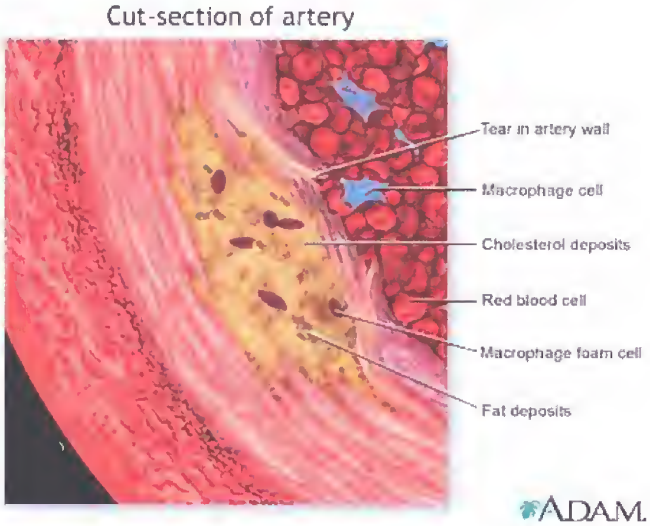
We process our milk using low temperature pasteurization without the added step of homogenization. Research has indicated that the pressure of mechanical homogenization releases an enzyme that can lead to the build-up of cholesterol in the arteries and heart. Our milk has a ***"creamline"*** and should be shaken. The most effective way to thoroughly blend in the cream is to tip the bottle sideways and shake it back and forth.



enzyme called xanthine oxidase (or XO for short) which is easily absorbed in the bloodstream and can damage arterial walls. Arteries are red blood vessels that carry away blood from the heart, and there are several types of arteries (look at figure of arteries on page 52). The screenshot above shows the impact that homogenization has on the fat globules in cow's milk. The "unhomogenized" stage being the first, and the "2-stage" being the last. As can be seen the fat globules have not only been reduced in size, but they are no longer clumping together. On page 46 of this report, we explained how cow's milk contains agglutinin, which is a substance that makes particles cluster together. It is because goat's milk does not contain this substance that the fat globules in it's milk do not clump together, thus contributing to it's digestibility. The smaller the fat globules are, the more preventable is the process of separation (as it occurs in unhomogenized cow's milk). On page 46 we also explained how the smaller fat globules that are present in goat's milk, also prevents cream separation in it, thus making it creamier. The difference in goat milk structure means that the milk does not need to be homogenized mechanically, because the small fat globules present in it, as well as the absence of agglutinin, prevents the separation that normally occurs in unhomogenized cow's milk. So, as stated on page 52 , the goat's milk is already homogenized in a natural way.

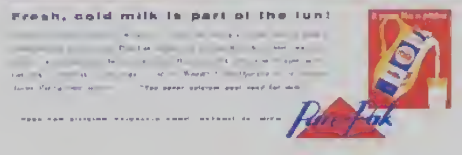
In the 1970's a doctor by the name of Kurt A. Oster did some in depth research, and came to the conclusion that there was a link

between xanthine oxidase and heart disease. His valid conclusions for the most part have been conveniently ignored. For more than 20 years Kurt A. Oster, MD, chief of cardiology emeritus at Park City Hospital, Bridgeport, Connecticut, gathered evidence that provided a conclusive explanation for atherosclerosis (a form of atherosclerosis, plaque clogging arteries). Xanthine oxidase is an enzyme that is found in cow's milk, but the mechanical homogenization process allows it to be absorbed intact by the body, where it attacks specific targets within the artery walls, one of which is plasmalogen.



Under normal circumstances, when milk in not homogenized, both the fat and the xanthine oxidase are digested in the stomach and small intestine into smaller molecules, which are either used or excreted from the body, but homogenization alters this normal biological process. Plasmalogen is a tissue which makes up 30% of heart muscle and artery wall cells. To understand in simple terms the role of plasmalogen, it can be compared to the mortar that holds the bricks of a wall together. When this tissue is destroyed by the xanthine oxidase, tears emerge in the artery's walls (shown in illustration above right). The body responds to the tears by forming a hard cover over the affected area known as a calcified plaque, that is formed from calcium deposits. The continuing formation of calcified plaques, leads to the hardening of the arteries, which in turn makes the arteries more narrow, and reduces blood flow while increasing blood pressure. Obstruction of the arteries that lead to the heart muscle can cause a heart attack. Homogenization came into widespread use in the 1930's and 40's, which according to Dr. Oster are the years in which heart disease incidents went up drastically .

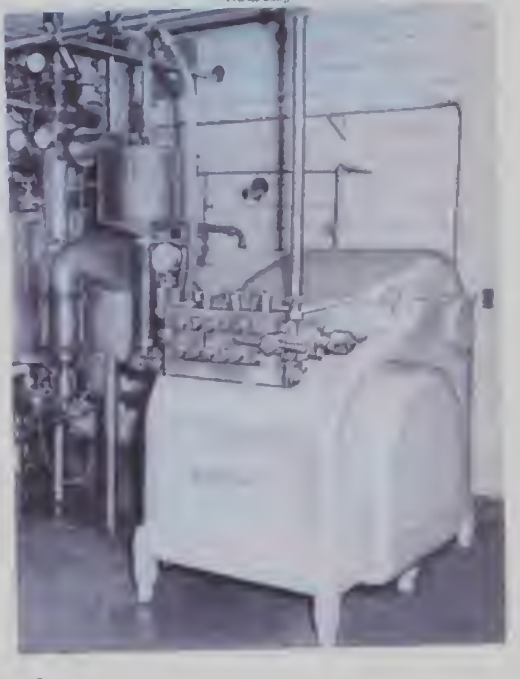
Why is milk homogenized?
Homogenization is the process of breaking down the butterfat particles in milk. By doing this, the smooth, uniform texture associated with milk is achieved. If we didn't homogenize the milk, the cream would rise to the top of your glass and you'd have to stir or shake your milk before drinking it.



The screenshot above, taken from the Dairy Farmers Of Oregon site, explains the reason for homogenization. It was first introduced in 1932 as a way to improve marketing for products. It really does not do anything to enhance the quality of milk, it only makes the appearance of the milk more attractive, and saves one the "effort" of having to shake it once in a while.

Fig. 4–10. A homogenizer breaks up butterfat particles so finely that a stabilized emulsion of homogenized milk is formed.

Courtesy Manton Gaulin Company



Unfortunately these trivial conveniences carry a large price tag in the long run, as research has shown.

Dr. Kurt A Oster MD wrote a book explaining the potential dangers of homogenization that was published in 1983. Screenshots below show info on his book.

Amazon.com: Homogenized Milk May Cause Your Heart Attack - The XO...
Amazon.com: Homogenized Milk May Cause Your Heart Attack - The XO Factor (9780943650015): Kurt A. Oster MD: Books. ... Hardcover: 312 pages; Publisher: Park City Pr; 1st edition (December 1983); Language: English; ISBN-10: 0943650017 ...
www.amazon.com › Books › Medicine - Cached - Similar

Homogenized Milk May Cause Your Heart Attack - The XO Factor [Hardcover]
Kurt A. Oster M.D. (Author)
No customer reviews yet. Be the first.

Available from these sellers.

2 used from $191.34

Studies Confirm Cholesterol-Heart Attack Link; The Fault in the Milk (New York Times Article) found at following link:

http://www.nytimes.com/1989/09/26/opinion/l-studies-confirm-cholesterol-heart-attack-link-the-fault-in-the-milk-466689.html

So, Was Dr. Oster Right About Xanthine Oxidase & Homogenization?

JN THE JOURNAL OF NUTRITION

HOME | CURRENT ISSUE | EMAIL ALERTS | ARCHIVES | SUBSCRIPTIONS | SEARCH FOR ARTICLES

Bovine Milk Xanthine Oxidase, Blood Lipids and Coronary Plaques in Rabbits[1]

Charles Y. Ho and Andrew J. Clifford

Department of Nutrition, University of California, Davis, California 95616

The effects of prolonged intravenous administration of bovine milk xanthine oxidase (EC 1.2.3.2) on blood lipids and arterial integrity were measured to determine if the administration of this enzyme produces metabolic changes conducive to plaque formation. New Zealand White rabbits were injected intravenously with bovine milk xanthine oxidase at 4-day intervals during a 13-week test period. At the end of the test period, the rabbits were killed and blood, heart, aorta, liver, and kidneys were collected and evaluated. Rabbits injected with phosphate buffer or acid-denatured xanthine oxidase for the same length of time served as negative controls. Additional rabbits fed a diet containing 3% added cholesterol for the same time period served as positive controls. The administration of xanthine oxidase in large amounts over a prolonged period did not alter serum cholesterol or triglyceride levels and did not reduce plasmalogen levels in the aorta or heart. Xanthine oxidase administration did not induce arterial plaque formation. Cholesterol feeding over the same time period increased serum cholesterol levels, reduced liver xanthine oxidase activity levels and resulted in a marked development of arterial plaques. Although xanthine oxidase activity was found in liver from all rabbits, enzyme activity was not detectable in aorta, heart or kidneys from any rabbit. Free or complexed bovine milk xanthine oxidase could not be demonstrated in heart, aorta, liver or kidneys from any of the rabbits with immunodiffusion or with immunofluorescent techniques. The study showed that when large intravenous doses of bovine milk xanthine oxidase were given to rabbits, the enzyme was not deposited in heart, aorta, liver or kidneys. The study also showed that large intravenous doses of xanthine oxidase over prolonged periods did not deplete arterial or coronary tissue plasmalogens, and did not induce arterial plaque formation.

KEY WORDS: · *milk xanthine oxidase* · *coronary artery disease* · *arterial plasmalogens* · *rabbit*

[1] Supported by National Dairy Council, Chicago, Illinois.

Manuscript received 11 October 1976.

It still is a subject of considerable debate. Of course, you also have special interest groups that have their own reasons for favoring homogenization, as the process does tend to extend shelf-life, which means less losses for suppliers.

The screenshot to the upper left shows a study from 1976 that refutes Dr. Oster's studies (which spanned for more than two decades). The Journal Of Nutrition has many fine research pieces, which is why on page 49 of this report we included a screenshot and link of a study showing that the oligosaccharides in goat's milk have anti-inflammatory

properties. It is important however, to realize that this is an old study. Does it's age nullify any scientific validity which it may possess? Of course not, for Dr. Oster's work also spans from the 1960's to the 1980's. However one cannot, when analyzing studies of this nature, that threaten to disturb popularly accepted systems or processes, alienate the popular mindset at that specific time, as well as the special non-scientific interests which might have existed.

Homogenization extends shelf-life which means less losses for suppliers. Homogenization also makes the milk appear more attractive to the eye by impeding separation, so that it has more marketing appeal.

Link of 1976 study: http://jn.nutrition.org/cgi/content/abstract/107/5/758

What is interesting , is that those who oppose the notion that Xanthine oxidase is harmful, base there references on studies that for the most part are from the 1970's.

In the screenshot below, that is from a refuting site, we show their references, which consist of some Dr.Oster studies, and studies refuting his findings (such as the link included above from the 1976 study-here listed as 1977 on number 12 of the list) which are mostly from the 1970's, with a few being from the early 1980's.

References

1. Oster, K., Oster, J., and Ross, D. "Immune Response to Bovine Xanthine Oxidase in Atherosclerotic Patients." *American Laboratory*, August, 1974, 41-47
2. Oster, K., and Ross, D. "The Presence of Ectopic Xanthine Oxidase in Atherosclerotic Plaques and Myocardial Tissues." *Proceedings of the Society for Experimental Biology and Medicine*, 1973.
3. *Ibid*.
4. Oster KA. Plasmalogen diseases: a new concept of the etiology of the atherosclerotic process. *American Journal of Clinical Research* 1971:2;30-35.
5. Sheep's milk
6. Ross DJ, Sharnick SV, Oster KA. Liposomes as proposed vehicle for the persorption of bovine xanthine oxidase. *Proceedings for the Society of Experimental Biology and Medicine*. 1980:163;141-145.
7. Clifford AJ, Ho CY, Swenerton H. Homogenized bovine milk xanthine oxidase: a critique of the hypothesis relating to plasmalogen depletion and cardiovascular disease. *American Journal of Clinical Nutrition*. 1983:38;327-332.
8. McCarthy RD, Long CA. Bovine milk intake and xanthine oxidase activity in blood serum. *Journal of Dairy Science*. 1976:59;1059-1062.
9. Dougherty TM, Zikakis JP, Rzucidlo SJ. Serum xanthine oxidase studies on miniature pigs. *Nutrition Report International*. 1977:16;241-248.
10. Ho CY, Crane RT, Clifford AJ. Studies on lymphatic absorption of and the availability of riboflavin from bovine milk xanthine oxidase. *Journal of Nutrition*. 1978:108;55-60.
11. Bangham AD. Physical structure and behavior of lipids and lipid enzymes. *Advances in Lipid Research*. 1963:1;65-104.
12. Ho CY, Clifford AJ. Bovine milk xanthine oxidase, blood lipids and coronary plaques in rabbits. *Journal of Nutrition*. 1977:107;758-766.

When something is scientific fact it will always continue to be so, no matter what decade, or century it is. The 1970's had a mindset that was hostile to mainstream nutritional change, especially when that change can signify the lost of profits. While it is true that during the 1970's the Organic Food Movement was just beginning to emerge, it's influence over mainstream society at that time was still minimal. Most people did not know anything about nutrition, and were easily manipulated by catchy commercial jingles, and attractive packaging. (Screenshots below of 1970's commercials)

One only has to look at commercials from that era to see that many of the foods that health conscious people today shun, were endorsed by, and marketed to, mothers of small children. The Dr. Pepper screenshot below is from a 1977 commercial.

Hostess Snack Cakes

Growing up in the seventies, I lived just down the block from my grandmother. Every few days she would walk down the sidewalk to our home with a basket in her arms, covered by a calico cloth. Under that cloth were cakes, pies, biscuits and other assorted goodies she had just baked for us. She was the old-fashioned, matriarch personified. That was the beauty of growing up in the seventies, life still offered those long gone opportunities.

Contrast that with this commercial for Hostess in the seventies, where the Mom cheerfully tells us that, "Sometimes a Mom has to say no" (attention modern parents!). That's why she only serves wholesome Hostess snacks for her family. After all, like the lady says, "Freshness never tasted so good." Which you could take two ways...

These screenshots can be found at this link: http://www.tvparty.com/70com.html

Dr. Pepper

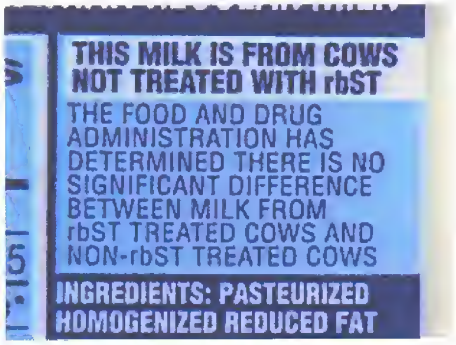
"I drink Dr Pepper and I'm Proud. I'm Part of an Original Crowd..."

Dr. Pepper was the oldest of the major soft drinks but the last to go mainstream. Their breakthrough came with some of the most effective advertising campaigns imaginable.

It's hard to think of someone nowadays saying that they are proud to drink soda. Even people who do not care about a healthy diet will tell you that soda is not healthy, which is why natural soda makers are steadily gaining more business.

This 1976 test, refuting the role of xanthine oxidase in arterial disease (link on page 57) was done during a 13-week test period, whereas Kurt A. Oster, MD studied this possible link from the early 1960s until the mid 1980s. During this long period he studied and compared the structure and biochemistry of healthy and diseased arterial tissue, and did autopsies on people who had been exposed to this enzyme for a period way longer than 13 weeks.

Official statements should not be always immediately accepted. For the FDA still continues to state (despite increasing scientific evidence to the contrary) that there is no significant difference between milk from cows treated with rbST or rBGH hormones and cows that are not treated with them. The studies that led to the approval of this harmful growth hormone were done by the very company that sells the hormone (something which we will also be discussing later in this report), so that there is no way that they can be impartial. It is only with consumer knowledge, and a demand for independent studies which are performed in an open-minded environment that one can hope to arrive at what is scientific fact.

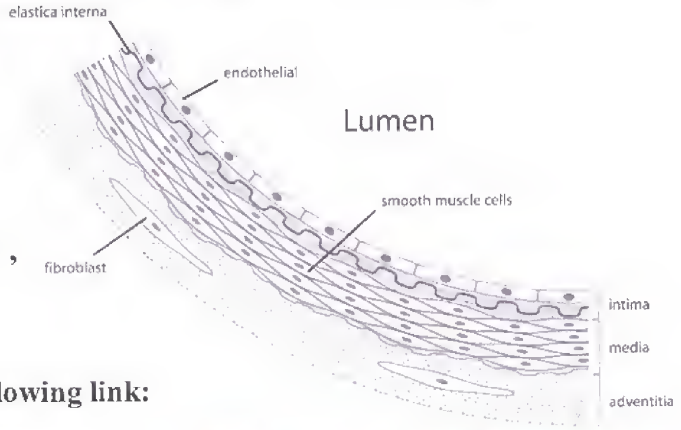


Recent research that we have done on more up-to-date studies seems to be confirming what Dr. Oster said.

A xanthine oxidase inhibitor is any substance that inhibits (or impedes) the activity of xanthine oxidase. According to Dr. Oster's research it is the activity of this enzyme, when subjected to the process of homogenization that wreaks havoc on the arteries, eventually

leading to cardiac problems. Three recent studies from the years 2003, 2004, and 2006, (included in this report) highlight with their results the hazardous impact that xanthine oxidase has on cardiac health. Before we mention the first two studies, we would have to explain what endothelial dysfunction is. Endothelial dysfunction is a process in which the endothelium secretes substances that promote plaque build-up which can lead to atherosclerosis instead of secreting the protective substances that prevent this build-up. It is the earliest detectable stage of cardiovascular disease.

The endothelium is the thin layer of cells that lines the interior surface of blood vessels. Endothelial cells line up the entire circulatory system, from the heart right down to the smallest capillary.



A clinical investigation that took place in 2003 , and which can be read on the site of The American Heart Association at the following link:

Xanthine Oxidase Inhibition Reverses Endothelial Dysfunction in Heavy Smokers
http://circ.ahajournals.org/cgi/content/short/107/3/416

shows that xanthine oxidase contributes to endothelial dysfunction, and that inhibiting (or stopping) the activity of this enzyme can actually reverse this condition.

Circulation. 2004;109:III-27-III-32
doi: 10.1161/01.CIR.0000131515.03336.f8

(*Circulation.* 2004;109:III-27 – III-32.)

Atherosclerosis: Evolving Vascular Biology and Clinical Implications

Role of Endothelial Dysfunction in Atherosclerosis

Jean Davignon, MD; Peter Ganz, MD

From the Hyperlipidemia and Atherosclerosis Research Group (Groupe de recherche sur les hyperlipidémies et l'athérosclérose, Clinical Research Institute of Montreal (Institut de recherches cliniques de Montréal (IRCM) (J.D.), Montreal, Canada; and the Cardiovascular Division (P.G.), Brigham and Women's Hospital, Boston, Mass.

Correspondence to Jean Davignon, Director of the Hyperlipidemia and Atherosclerosis Research Group, Clinical Research Institute of Montreal (IRCM), 110 Pine Ave W, Montreal, QC H2W 1R7, CANADA. E-mail davignj@ircm.qc.ca

As the major regulator of vascular homeostasis, the endothelium exerts a number of vasoprotective effects, such as vasodilation, suppression of smooth muscle cell growth, and inhibition of inflammatory responses. Many of these effects are largely mediated by nitric oxide, the most potent endogenous vasodilator. Nitric oxide opposes the effects of endothelium-derived vasoconstrictors and inhibits oxidation of low-density lipoprotein. A defect in the production or activity of nitric oxide leads to endothelial dysfunction, signaled by impaired endothelium-dependent vasodilation. Accumulating evidence suggests that endothelial dysfunction is an early marker for atherosclerosis and can be detected before structural changes to the vessel wall are apparent on angiography or ultrasound. Many of the risk factors that predispose to atherosclerosis can also cause endothelial dysfunction, and the presence of multiple risk factors has been found to predict endothelial dysfunction. A number of clinical trials have shown that 3-hydroxy-3-methylglutaryl coenzyme A (HMG-CoA) reductase inhibitors (statins) improve endothelial dysfunction in patients with coronary risk factors beyond what could be attributed to their impact on plasma lipids. Studies have elucidated several possible mechanisms by which statin therapy may improve endothelial dysfunction, including upregulation of nitric oxide production or activity and reduction of oxidative stress.

http://circ.ahajournals.org/cgi/content/short/109/23_suppl_1/III-27

The following study done in 2004 (screenshot and link shown above) shows that endothelial dysfunction leads to atherosclerosis . Since the 2003 study (on page 60) showed that xanthine oxidase contributes to endothelial dysfunction, and the 2004 study shown on this page links that condition to atherosclerosis, we can perhaps safely conclude that xanthine oxidase does cause atherosclerosis, and as such can lead to heart attacks. Sadly, it does not stop there. Additional studies keep uncovering new links between this enzyme and potential health problems. An older study conducted in 1968 indicated that xanthine oxidase reduces the amount of cytochrome c in the body. This is highly unfortunate because these cell proteins perform a vital function

Cytochrome c, heme shown in red.

The Reduction of Cytochrome c by Milk Xanthine Oxidase (1968)

http://www.citeulike.org/user/neffk/article/4645449

The Reduction of Cytochrome c by Milk Xanthine Oxidase
by: Joe M. Mccord, Irwin Fridovich

J. Biol. Chem., Vol. 243, No. 21. (10 November 1968), pp. 5753-5760.

Posts Export

Citation Format
Plain

View FullText article
- HighWire, Pubmed, Hubmed, Pubget NEW

Abstract

The reduction of cytochrome c by xanthine oxidase and the competitive inhibition of this process by carbonic anhydrase and by myoglobin have been studied by kinetic and by equilibrium binding methods. Carbonic anhydrases isolated from bovine and from human erythrocytes differed strikingly in their ability to inhibit competitively the reduction of cytochrome c. The Ks for cytochrome c was a function of the concentration of xanthine oxidase, as were Ki for carbonic anhydrase and Ki for myoglobin, whereas Ks for xanthine was invariant under the same conditions. Binding studies performed by a variety of methods indicated that carbonic anhydrase does not bind to xanthine oxidase. Carbonic anhydrase was found to be a potent inhibitor of the sulfite-oxygen chain reaction initiated either by the reduction of oxygen at an electrode or by xanthine oxidase plus xanthine. The data are consistent with the conclusion that xanthine oxidase, when catalyzing the aerobic oxidation of xanthine, generates an unstable reduced form of oxygen, presumably the superoxide anion, and that this radical is the agent which directly reduces cytochrome c and initiates the sulfite-oxygen chain reaction. Carbonic anhydrase and myoglobin appear to inhibit the reduction of cytochrome c and the initiation of sulfite oxidation by reducing the steady state concentration of the superoxide anion. It is proposed that they accomplish this end by catalyzing the following dismutation reaction:O2middle dot- + O2middle dot- + 2H+ [rarr] O2 + H2O2

by transferring energy within cells. Without a doubt, it is a challenge to keep a child adequately nourished in this Age. Homogenized convcntional cow's milk drunk in BPA Sippy cups can have disastrous results. We have also found out in a recent study done this very year, that a variation of Bisphenol-A which is produced in the body, and is called Bisphenol A 3,4-Quinone, promotes the expansion of xanthine oxidase. Because of this we want all of our sons' plastic cups and plates to be BPA free. We have known of the hazards posed by BPA for years, though it was a bit surprising for us to see how there appears to be a connection between xanthine oxidase and plastic. We do not want anything purchased for our sons that shows the numbers in the figure above. These numbers are used on items containing BPA.

Bisphenol A 3,4-quinone induces the conversion of xanthine dehydrogenase into oxidase according to this study: http://www.citeulike.org/article/7277619

Bisphenol-A in the body can be converted into Bisphenol A 3,4-quinone

according to this in vitro study :

The adverse effects of BPA may not be limited to the genital tract and mammary glands. Behavioral disorders were evidenced in Wistar rat offspring when mothers were administered BPA during pregnancy and lactation (29,30); both experiments used doses well below the no observed adverse effect level of 50 mg/kg/day. In vitro, the mutagenicity of low concentrations of BPA was demonstrated using human (31) and Syrian hamster (32) embryo cells. In addition, it was demonstrated that BPA could be converted in vitro to bisphenol o-quinone, a reactive intermediate able to bind irreversibly to DNA (33).

http://findarticles.com/p/articles/mi_m0CYP/is_3_111/ai_100730732/

No one doubts that organic milk in it's natural state is a healthful beverage. However, in an era where more emphasis is given to product appeal and to successful marketing, rather than to the actual quality of the product, it is essential that the consumer takes the initiative to educate themselves, especially where children are concerned. Goat's milk does not have to be homogenized, so if our sons consume it, they would be obtaining more calcium (and other nutrients), while avoiding any hazards that are potentially associated with homogenization.

6) The last (but not least) reason why we want our sons to consume goat's milk is that growth hormones (such as the rBGH used in cows) are not used on goats, as the screenshot to the left, taken from the USDA site shows. Even though antibiotics may at times be used, most suppliers do not use them, for they know that those who drink goat's milk tend to be more health conscious.

Can Hormones and Antibiotics be Used When Raising Goats?

Hormones are not approved for growth promotion in goats.

Antibiotics may be given to prevent or treat diseases in goats.

The screenshot below shows two such suppliers of goat's milk.

Value of **Goat Milk**
At White Egret Farm **no antibiotics**, growth **hormones**, BST, ... that authorities had to devise different tests for the presence of **antibiotics in goat milk**. ...
www.whiteegretfarm.com/html/**milk**.html - Cached - Similar

Meyenberg **Goat Milk** Products - Home
Meyenberg **Goat Milk** Products are: Easier To Digest. **No** Preservatives, **Antibiotics**, or Bovine Growth **Hormones** (BGH). Certified Kosher. Completely Natural ...
www.meyenberg.com/ - Cached - Similar

Bovine growth hormone supplementation

Since November 1993, with FDA approval,[63] Monsanto has been selling recombinant bovine somatotropin (rbST), also called rBGH, to dairy farmers. Cows produce bovine growth hormone naturally, but some producers administer an additional recombinant version of BGH which is produced through a genetically engineered E. coli because it increases milk production. Bovine growth horome also stimulates liver production of insulin-like growth factor 1 (IGF1). If rbST-treated cows produced milk with higher levels of IGF1 this would be of medical concern, because IGF1 stimulates cancer growth in humans. Elevated levels of IGF1 in human blood has been linked to increased rates of breast, colon, and prostate cancer.[64][65] Monsanto has stated that both of these compounds are harmless given the levels found in milk and the effects of pasteurization.[66] However Monsanto's own tests, conducted in 1987, demonstrated that statistically significant growth stimulating effects were induced in organs of adult rats by feeding IGF-1 at low dose levels for only two weeks. "Drinking rBGH milk would thus be expected to significantly increase IGF-1 blood levels and consequently to increase risks of developing breast cancer and promoting its invasiveness."[67]

On June 9, 2006, the largest milk processor in the world and the two largest supermarkets in the United States--Dean Foods, Wal-Mart, and Kroger--announced that they are "on a nationwide search for rBGH-free milk."[68] Milk from cows given rBST may be sold in the United States, and the FDA stated that no significant difference has been shown between milk derived from rBST-treated and that from non-rBST-treated cows.[69] Milk that advertises that it comes from cows not treated with rBST is required to state this finding on its label.

Cows receiving rBGH supplements may more frequently contract an udder infection known as mastitis[70]. Problems with mastitis have led to Canada, Australia, New Zealand, and Japan banning milk from rBST treated cows. Mastitis, among other diseases, may be responsible for the fact that levels of white blood cells in milk vary naturally.[71][72]

In the European Union rBGH is banned.[73]

The above screenshot from Wikipedia gives a summary of what rGBH is, though it does not go into profound detail when it seeks to explain the hazards of this GMO hormone, which unfortunately are numerous. We have taken the time to explain in an extremely detailed fashion why we want our sons to have a certain diet. As you see, everything that we say in this report is based on solid logic, and our reasons for wanting our sons to eat this diet are way more rational that the unfounded reluctance that has been manifested towards complying with our requests which can only serve to promote well-being.

These growth hormones represent a great danger to small children who are just beginning to develop.

It was approved in 1993 by the FDA, who quite naively depended on a study which had been conducted by Monsanto itself. Not only was the study obviously biased, it was extremely short as well , being performed on 30 rats for only 90 days. Canadian scientists say that the reports portraying rGBH as benign are false, as independent studies have been done there, and rGBH is banned in Canada (as well as in most developed countries, look at wikipedia screenshot below).

Bovine somatotropin

From Wikipedia, the free encyclopedia

Bovine somatotropin (abbreviated bST and BST), also known as **bovine growth hormone**, or **BGH**, is a protein hormone produced in cattle.

Since 1994 it has been possible to synthesize the hormone using recombinant DNA technology to create **recombinant bovine somatotropin (rBST)**, **recombinant bovine growth hormone (rBGH)**, or **artificial growth hormone**. Monsanto was the first to develop the technology and marketed it as "Posilac" - a brand now owned by Elanco Animal Health, a division of Eli Lilly and Company.

Posilac was banned from use in Canada, Australia, New Zealand and most of Europe, by 2000 or earlier.

In the United States, concern about potential side-effects from drinking milk produced by cows injected with artificial growth hormone has slowly grown, with a number of products and retailers now becoming rBST-free.[1][2] [2] [3] [4] [5]

rBST is a product primarily giv
by injection to increase milk pr

Year	Amount Per Day
1930	12 pounds
1988	39 pounds
Now	50 pounds

The reality is that there have been no long term studies of rGBH effects that have been done on humans. FDA's ridiculous statement, that these hormones are safe, and that there is no difference between cows who receive them, and those who

do not contradicts all the evidence obtained through independent studies done elsewhere, and which led most developed countries to ban a toxic hormone that the U.S. still continues to use. Just what exactly is this hormone? It is a poor, hazardous imitation of bovine growth hormone, which is a naturally occurring hormone in cows that stimulate milk production. However, the amount of milk that the cows yielded naturally, were not enough for those who were only interested in making more profits. So they came out with this genetically modified growth hormone called recombinant bovine growth hormone, which is made out of genetically engineered e coli bacteria. The hormone is sold to dairy farmers under the name of Posilac. Though the hormone is hazardous, both for humans and for animals, it is potent is stimulating milk in cows, and is said to increase milk production by 10% and even up to 30% more when the cow is injected with extra high doses. However, we must say that this is definitely one of those cases in which quantity does not in any way equate quality.

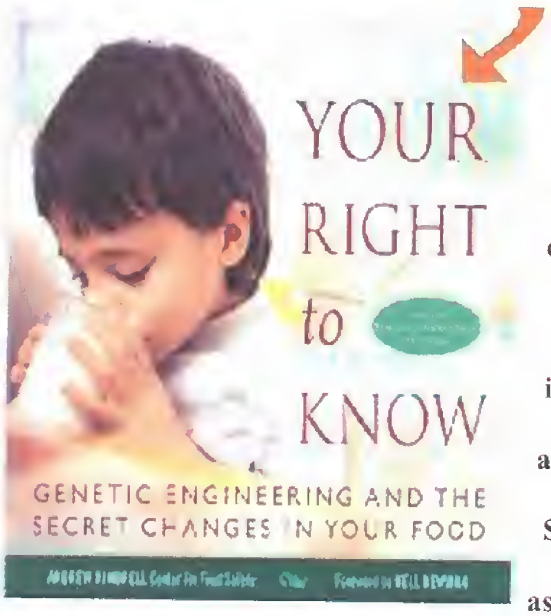
Since rBGH started to be used in 1994 (a year after approval by the FDA), business has been quite good for Monsanto, and health has been worst for the consumer.

Milk production in hormone induced cows are a whopping 50 pounds (over 6 gallons) of milk per cow, per day.

In 1930, the average cow produced around 12 pounds of milk a day (see chart on page 65, showing the level of daily milk production according to the year). Now it has increased to

50 pounds a day. According to an ABC report, genetically engineered rBGH is injected into three million dairy cows in the U.S. twice a month. The milk these cows produce is then shipped throughout the country as milk, cream, cheese and yogurt, and in baked and other goods. Products from cows that receive rBGH are almost never labeled as such, for only farmers that refuse to use these hormones may label their products voluntarily to assure their customers of it's welcomed absence.

Children should at all costs avoid consuming products that have these hormones. Among the many hazards that are related to the use of rBGH are the risk of developing breast, prostrate, and colon cancer. Drug residues in the milk may have negative long term impact on developing children. Of 64 drugs commonly used on cows, 35 are not approved for bovine use. The drugs that are not in the "approved for bovine use" category are banned tranquilizers and antibiotics that are approved only for race horses, and yet are given to these cows. Milk from these cows can provoke allergies in children, cause digestive problems, and create antibiotic-resistant bacteria.



Since rBGH milk is different in structure, as well as chemically, and nutritionally from natural milk, the child will receive inferior nutrition while being exposed to dangerous substances. Among the dangerous substances in the milk that most children are drinking , are not only the very unhealthy antibiotics and artificial hormones (not to mention the xanthine oxidase released during homogenization, see pages 51-63 of this report), but all the harmful

pathogens , and other undesirable substances that are found in the feed of rGBH cows, and which greatly affect the quality of their milk. Because cows on rGBH require higher protein feed, their feed is an interesting yet revolting mixture of what are thought of to be good and cheap sources for their daily protein needs, but that only serve to reflect the desire for economy in order to maximize profits, all at the expense of the consumer's health. In the concoction that is fed to these unfortunate animals are found : poultry manure, blood/bone meal, tallow, and platewaste (restaurant leftovers).

Published on Saturday, June 18, 2005 by the Associated Press

Critics: US Doing Too Little to Prevent 'Mad Cow'

by Libby Quaid

WASHINGTON -- American cattle are eating chicken litter, cattle blood and restaurant leftovers that could help transmit mad cow disease -- a gap in the U.S. defense that the Bush administration promised to close nearly 18 months ago.

"Once the cameras were turned off and the media coverage dissipated, then it's been business as usual, no real reform, just keep feeding slaughterhouse waste," said John Stauber, an activist and co-author of *Mad Cow USA: Could the Nightmare Happen Here?*

Loopholes in Ban on Cattle Remains in Feed

The Food and Drug Administration promised in January 2004 to close loopholes in a ban on putting cattle remains in cattle feed, but it has failed to act. The government calls the ban a "firewall" against the spread of mad cow disease. Eating the mad cow disease protein is the only way cows are known to get the disease.

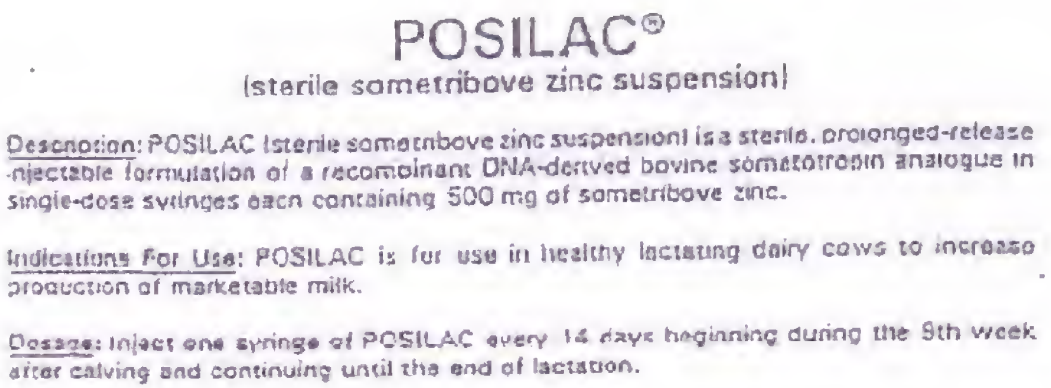
Loopholes include:

- Ground-up cattle remains can be fed to chicken, and chicken litter is fed back to cattle. Poultry feed that spills from cages mixes with chicken waste on the ground, then is swept up for use in cattle feed. Scientists believe the BSE protein will survive the feed-making process and may survive being digested in chickens.
- Cattle blood can be fed to cattle and often comes in the form of milk replacement for calves. Some scientists believe blood from infected cattle could transmit the disease.
- Restaurant leftovers, called "plate waste," are allowed in cattle feed. Cuts of meat that contain part of the spinal cord, or become contaminated by spinal tissue while being prepared, could be infected with BSE.
- Factories are not required to use separate production lines and equipment for feed that contains cattle remains and feed that does not, creating the risk that cattle remains could accidentally go into cattle feed.
- Besides being fed to poultry, cattle protein is allowed in feed for pigs and household pets, creating the possibility it could mistakenly be fed to cattle.
- Unfiltered tallow, or fat, is allowed in cattle feed, yet it has protein impurities that could be a source of mad cow disease.

The screenshots on this page were taken from the following link:

http://www.commondreams.org/headlines05/0618-02.htm

They show the seldom mentioned yet scary practices that abound on conventional farms. Though this can also affect meat quality (something which beef eaters should consider), we should not underestimate it's impact on the milk that we choose to give to our children.



POSILAC®

(sterile sometribove zinc suspension)

Description: POSILAC (sterile sometribove zinc suspension) is a sterile, prolonged-release injectable formulation of a recombinant DNA-derived bovine somatotropin analogue in single-dose syringes each containing 500 mg of sometribove zinc.

Indications For Use: POSILAC is for use in healthy lactating dairy cows to increase production of marketable milk.

Dosage: Inject one syringe of POSILAC every 14 days beginning during the 9th week after calving and continuing until the end of lactation.

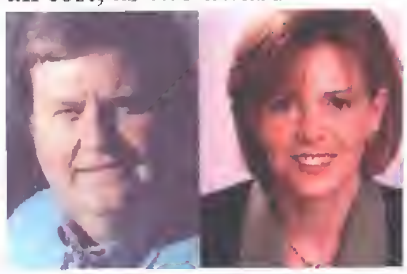
If you read the screenshot above (taken from the link below) explaining what rBGH is, you will notice that the prime reason for the use of this hormone is "to increase production of marketable milk." In short: To make money! The health of the consumer is not an issue.

Link of Posilac: http://www.combat-monsanto.org/docs/doc%20scan/rBGH/Pages%20from%20posilac%20notice.pdf

Just like a woman who breastfeeds has to take care what she puts into her body, and so takes great care in her diet in order not to transmit in her milk certain substances that can be harmful to her baby, we should be concerned about what is being put into these cows. How come so many can understand that notion when it comes to breastfeeding, yet do not understand how applicative it is to dairy farming as well? We do so at our own peril. Unfortunately, government corruption, and the laissez faire mentality of big business, are not producing food products (or any type of product for that matter) that gives a priority to consumers' health. So under these disadvantageous circumstances, it is the consumer that must take the initiative to protect their health, and to safeguard the well-being of their children. We did this with our sons until they were taken away from us illegally, and even afterwards have tried to do things to guarantee their well-being, such as demanding that they continue to be given kosher organic food, and asking for study sessions in order to help them learn more effectively.

That our demands have fallen on deaf ears, does not in any way indicate that we have not exerted effort in our extremely limited and increasingly powerless position to help safeguard our children's well being ,and so hopefully diminish any negative impact on their health that can occur as a result of their separation from us, and the lack of love and consideration towards them on the part of their present "caretaker". We have discussed in depth in this report the very real, but yet seldom known issues regarding nutrition and food manufacturing, so that our very rational worries could be understood, as well as our insistence on the food that we are requesting. You cannot separate all that will be discussed in this report with our decision to give our boys the diet that we were giving them, and that we wish to continue to be given to them.

If one is aware of the issues, one also knows that there is no way that the dangers of an inadequate and unnourishing conventional diet can be overestimated. The atmosphere that allows these horrendous business practices to thrive is for the most part dependant on consumer ignorance and compliancy. Since the ignorance of those who consume these products is the principle weapon that these corporations have to continue enhancing their monetary gain, any change in that state, which may bring awareness to the misguided consumer is immediately suppressed at all cost, as two award - winning investigative reporters soon found out . Steve Wilson and Jane Akre are a husband - wife team, who at one time worked



for the Fox channel (channel 13) in Tampa, Florida. They were about to reveal their story, informing others of the link between rBGH and cancer, when their boss (pressured by Monsanto of course) refused to allow the story to come to light.

The reporters were eventually fired on December 2, 1997, after refusing to receive several bribes that had been offered to them. Their story can be read at:

http://www.foxbghsuit.com/ .

Not only has Monsanto exerted pressure on the media, but they have tried to bribe and manipulate the medical establishment, and also control what laws the FDA passes.

In Canada, during the year of 1998, a committee whose job it was to decide on the potential hazards of rBGH, was addressed by a spokesperson called Ray Mowling (of Monsanto Canada) who told the said Committee that "exhaustive scientific studies" on the long-term risks of rBGH on human health, "clearly indicate" that the product bears no danger to humans or animals. He also said that recognized authorities such as the Canadian Society of Pediatrics and the Scientific Committee of the Canadian Medical Association, have nothing relevant to prove that rGBH poses a risk to human health.

Not content with this, Monsanto , who also controls the FDA, has used it's influence to demand that mandatory labeling of potential sources of rBGH not be approved, and have even sought to remove the voluntary labels that small farmers place on their milk products to show consumers that the product has no rBGH .

The screenshot below is from a site that valiantly tries to combat the abuses of this corporation (Monsanto) who so cheapens in their avaricious mindset the welfare of misguided consumers, who are in most cases unknowingly jeopardizing their own health and those of their families. This hormone creates some VERY sick cows! A study done in the University of Vermont (described in screenshot below) showed that up to 40% of rGBH treated cows in their study developed mastitis (udder infection), while only 10% of non-treated cows became sick. To see the whole site go to:

http://www.combat-monsanto.co.uk/spip.php?article233

Another consequence of the Posilac injection is a significant rise in the rate of mastitis, an inflammation of the udders which is quite common in high-yielding herds, and which results in pus in the milk. According to a study by the University of Vermont on an study group, the level of mastitis reached 40% among the group of cows treated with rGBH but it was only 10% among a control group, which was not treated. The severity of mastitis is measured by what is called the "somatic cell count" or "SCC"). To estimate how inflamed the udders are, one counts the number of leucocytes or white cells found in the cows' blood: if the cell count is raised, that means traces of pus will be found in the milk. What's more, these problems with mastitis further affect the quality of the milk because in order to treat the infections, farmers turn to injections of antibiotics, which leave residues in the milk. These same antibiotics then find their way into the consumer's system and play a part in developing pathogenic colonies which are resistant to antibiotics. [1] As long ago as 1983, the scientific community was already alarmed at the massive administration of antibiotics on American farms and had delivered a petition to the FDA seeking a ban on their use

The cows that have to endure these hormones, live miserable lives. They lose weight while at the same time their internal organs grow abnormally large, crippling their health. The screenshot below right shows the increase in size of different cow organs according to hormone dosage. Cows that are on rBGH, shorten their lifespan by two years. So whatever poor quality milk the farmer obtains from the cow during it's lifetime, cannot really bring him real profit, if every three years he has to replace seriously ill or dead cows.

This is dangerous, folks. To cows and humans. We drink their body fluids. We drink their hormones. Their adverse effects become ours.

No biological effects? Here are the actual data:

	CONTROL GROUP	LOW DOSE	MEDIUM DOSE	HIGH DOSE
TOTAL WEIGHT	1591 lbs	1501	1509	1487
THYROID	1.24 ozs	1.33	1.45	2.00
LIVER	23.9 lbs	23.9	27.0	26.8
HEART	7.5 lbs	7.5	9.0	9.0
ADRENAL	1.15 ozs	1.39	1.68	1.73
KIDNEY	3.7 lbs	4.1	5.1	5.3
OVARY	0.82 ozs	0.99	1.07	1.10

Of course this is only scratching the surface, It is disturbing that those who defend the injection of cattle have stated that rBGH is biologically identical to the normally occurring Bovine Growth Hormone that cows produce on their own, and that administering this synthetic hormone does not in any way change the composition of the milk produced. Well, if this is the case, then why insist on using it at all?

We have spoken of the intense efforts on the part of Monsanto to bribe, influence, and impede the truth from reaching a large number of consumers. Why so much effort for something that is just the same? Because it is not. The fact that this synthetic hormone greatly increases milk production, at the expense of both the cow's and the consumer's health proves that it is not biologically identical to the naturally occurring hormone that cows produce.

IGF-1, which is also called Insulin- like growth factor-1 is actually a natural molecular structure , similar to insulin. IGF-1 is a hormone that is produced when the liver is stimulated by growth hormone.

According to certain studies, the concentration of IGF-1 is more elevated in rBGH treated milk, and this hormone does not decompose during digestion, but survives in the form of the milk protein casein, neither does pasteurization destroy it.

The elevation of IGF-1 levels found in rBGH milk should be of great concern to the public, because a study in Harvard University revealed that there is a link between the level of IGF-1 in the blood and prostrate cancer, while recent articles in scientific journals have also stated that there is a link between an elevated concentration of IGF-1 in milk treated with rBGH and a high incidence of breast and prostrate cancer.

Antibodies

Antibiotics given in the first year of life quadruple a child's risk of developing asthma. Children given antibiotics after age one year are still one and a half times more likely to develop asthma than children not given antibiotics. What is particularly concerning is that every course of antibiotic treatments a child has increases the occurrence of allergies, and that treatment with broad spectrum antibiotics, such as streptomycin, tetracycline, and Cipro, appear to be more likely to be associated with allergy development than is ordinary penicillin.

Antibiotics enhance allergic reactions by sidestepping the normal immune system response. Whenever the immune system successfully deals with an infection it emerges from the experience stronger and better able to confront similar threats in the future. Through the process of developing and then conquering infection, the child gets rid of acquired toxins and poisons from the body and receives a boost to the immune system. If you always jump in with antibiotics at the first sign of infection you do not give the immune system a chance to grow stronger.

Antibiotics also act nonspecifically, killing infectious bacteria as well as upsetting the normal gut flora. Substances that are introduced through the mouth are normally ignored by the humoral system. But, in order for this to occur, the normal bacteria in the intestines need to be present. Alterations in the normal intestinal bacteria levels, especially in infancy, allow food proteins and other particles to pass into the blood stream before they are broken down, where the body identifies them as a threat, contributing to a persistent humoral response and the development of allergic diseases.

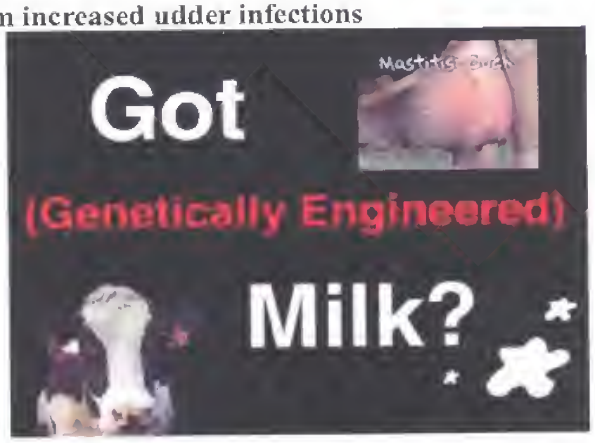
The screenshot above is from a Holistic doctor's site. Even though the site was not speaking about rBGH, it does explain how constant exposure to antibiotics can greatly weaken the immune system. Since conventional milk is laden with hormones and traces of antibiotics, daily consumption would mean constant exposure to antibiotics. Unfortunately, no studies have been made to study the possibility of developing resistance to antibiotics. The increased doses of antibiotics is a futile way to cope with the disease that is rampant among rBGH treated cows, that could be more effectively resolved with proper hygiene and diet.

What's So Bad About rBGH milk?

Recombinant Bovine Growth Hormone (rBGH) was one of the first 'wonder products' to emerge from the 1980s biotech industry. Derived from a genetically modified organism (GMO), rBGH is produced in large fermentation vats by an altered E. coli bacteria. When injected into cows on a routine basis, it boosts milk yields anywhere from 10-25% - hence its nickname "crack for cows." Contrary to claims from its proponents, rBGH is not the same as its natural namesake, since it also contains extra 'marker' amino acids to enable proprietary tracking by its corporate owners. Milk induced by rBGH is also quite different from regular milk - being lower in protein and containing elevated levels of Insulin Like Growth Factor 1 (IGF-1), a compound active in humans and highly correlated with certain forms of cancer. Cows injected with rBGH suffer up to 50% more mastitis (ie. udder infection) leading to higher rates of often illegal antibiotic use. These drugs in turn find their way into rBGH milk and t he fastfood hamburger derived from culled dairy cows. Over 80 drugs have been found by the General Accounting Office (GAO) in the U.S. milk supply, yet the Food and Drug Administration (FDA)- charged with insuring the quality of our food supply - only tests for a handful. It takes just one cow on sulfamethazine (a common illegal dairy antibiotic) to contaminate the milk of 70,000 other animals in a large corporate processing plant.

One site that we saw actually compared rBGH to "crack" for cows, because it makes them speed up and produce more milk, only to make them very sick afterwards.

Monsanto has had to admit to at least twenty toxic effects on cows, and even the FDA admits that cows injected with rBGH could suffer from increased udder infections (mastitis), severe reproductive problems, digestive disorders, foot and leg ailments, and persistent sores, and lacerations. Because rBGH commonly induces udder infection in cows, many times the milk is contaminated by pus, and the cow has to be treated with antibiotics, whose traces also end up in the milk.

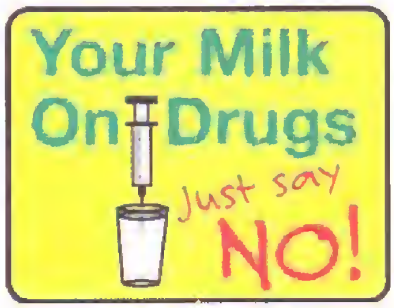


Some farmers, as well as conscientious consumers, have protested against this hormone, such as a consumer group called the Center for Food Safety (CFS), which began legal action to have the hormone pulled off the market. CFS says that the U.S. Food and Drug Administration (FDA) has ignored evidence of potential health hazards from rBGH.

Milk

Milk is a popular drink the world over. Almost 75 percent of the milk the world drinks, however, is goat's milk, unlike in the United States, where cow's milk is the popular choice. Does the world know something America doesn't? In a word, yes. Overall, goat milk is much healthier for humans to drink than cow's milk. Goats are also easier and cheaper to raise than cows. Goat's milk is known to be very close in makeup to human breast milk. In fact, children who drink goat's milk gain more weight and have better skeletal mineralization, blood vitamin makeup, stature and bone density, and healthier levels of riboflavin, niacin, and thiamine than children who drink cow's milk.

It is sad that the U.S. lags behind the rest of the world in goat's milk consumption. This healthy alternative has the potential to bring relief to many, and is safer for the reasons that we have discussed. It is a possibility that corporations like Monsanto who benefit economically from bovine growth hormones, have somewhat limited the growth of the goat milk market for reasons that are evident, as goats are not given growth hormones. For all of these reasons we prefer our sons to consume goat's milk.



We do not wish our sons to be given any conventional milk whatsoever. We want organic milk products and goat's milk (the brands mentioned). We know that most likely up to now they have been drinking the conventional junk, despite our constant insistence that they have an organic and natural kosher diet. So we please wish any such inferior food to be discontinued as soon as possible.

We also would like for our sons to receive the "Amazing Grass Kidz Superfood" supplement which we used to buy for them. The supplement should preferably be given once a day, mixed in either goat's milk or Toddler Formula. This is a highly nutritious

plant-based supplement, and because we gave them this supplement (as well as Toddler formula, goat's milk, and organic food) they never got sick.

The ingredients (as listed in the screenshot above) are organic and provide the child with the equivalent of consuming 31 fruits and vegetables. A doctor (whose statement is also shown on the screenshot) also endorses the product. We started buying this supplement when Wencito was very small, and can assure your agency that it is a high quality product from our own personal experience.

One can never underestimate the value of supplements and their role in contributing to a child's optimum health. Ongoing studies are showing that a large number of 21st century children are actually undernourished. Many of the so-called illnesses such as ADHD in most cases can be due to the poor nutrition that has become so rampant in our era. A lack of vital nutrients that are necessary for the proper functioning of the brain and body coupled with an excess consumption of refined sugar, hydrogenated oils, and other

hazardous substances can severely impair a child's ability to function in the school setting. Even children who eat a healthier diet require a supplement, because time limits, or the child's eating habits (whether he is a picky eater or not) can make it difficult for the child to consume the extremely varied diet that is required on a daily basis to ensure adequate intake of vital nutrients. The ingredients and nutritional content are shown on the screenshot to your right. We would mix this supplement with Toddler formula to ensure a complete intake of necessary vitamins and minerals.

Nutritional Breakdown - Kidz SuperFood Powder

Supplement Facts

Serving Size -1 Scoop (6 grams)
Servings per container 33

	Amount Per Serving	% Daily Value
Calories	21	
Calories from Fat	0	0%
Total Fat	0g	0%
Sugar	1g	
Cholesterol	0mg	0%
Protein	1g	2%
Total Carbohydrate	4g	1%
Dietary Fiber	1g	4%

Vitamin A (100% as Betacarotene)	30%	Riboflavin	15%
		Vitamin C	15%
Calcium	5%	Iron	11%
Thiamin	20%	Folic Acid	10%
Vitamin K	50%	Potassium	2%
Sodium	3%	Chlorophyll	6mg**

Percent Daily Values are based on a 2000 calorie diet
** Daily Value not established

Suggested Use: Mix one scoop with 4 to 6 oz of your favorite milk beverage. We recommend 1 to 3 servings daily. Recommended for ages 2 and up, or anyone who wants to feel like a kid again!

Mixing Tip: Dissolves best when mixed with 1 ounce of water prior to adding milk.

BEST KEPT REFRIGERATED AFTER OPENING OR KEEP IN A COOL DRY PLACE

Ingredients-All Natural

Amazing Grass Phyto-nutritious™ Fruit and Veggie Blend (GREENS- Organic Wheat Grass, Organic Barley Grass, Organic Alfalfa, Asparagus, Lima Beans, Green Peas, Kale, Kiwi, Organic Spinach, Organic Broccoli, Brussel Sprouts, Green Beans, Zucchini ORANGES / YELLOWS Apricots, Organic Carrots, Mangos, Pineapple, Sweet Potatoes, Tangerines, Yellow Squash REDS- Pomegranites, Raspberries, Guavas, Cranberries, Red Cabbage, Cherries, Tomatoes BLUES / PURPLES- Beets, Plums, Purple Grapes, Blueberries) Organic Oat Fiber, Organic Soy Milk Powder (Organic Soy Beans, Organic Cane Juice), Organic Cocoa, FOS (from Chicory Root), Dutch Cocoa, Natural Vanilla, Apple Pectin Fiber, Carrageenan, Sea Salt, Silicon Dioxide (anti-caking) Contains Organic Non-GMO soy

*Each serving contains over 1670 mg of whole food fruit and vegetables concentrates.

In the United States a national study done on children ages 1 to 11 was published in August 2009, which found that one out of five children are deficient in vitamin D. Iron deficiency, which can cause learning difficulties, is also common in the U.S. Essential fatty acids (DHA), iron, and iodine, are all necessary for proper brain and nerve function.

Kidz SuperFood - A Family of Phytochemicals

The best way to get a wide variety of phytonutrients is to eat 5 to 9 daily servings of rich, vibrant and rainbow colored fruits and vegetables. That's because the pigments which give fruits and vegetables their vibrant colors are phytonutrients. There are so many phytochemicals found in the plant foods we eat it's difficult to classify them easily. The table below lists some of the most benenficial phyto-nutrients, how they work and the foods where they can be found.

Phytonutrient family	How It Works	Important Food Source
Terpenes: including carotenes, limonoids, saponins, leutins ,lycopenes, tocopherols	Activates the body's protective enzymes in the liver, antioxidant, modify hormones, block cholesterol absorption, protect eyes, repair DNA	Colorful fruits and vegetables, citrus peel, beans, grains, legumes, nuts, herbs including chamomile and ginseng. Reds, yellows, and greens are the colors that predominate in this family
Phenols: including polyphenols, anthocyanidins, catcechins, isoflavones, flavonoids, lignons and tanins	Protects against heart and vascular diseases, protects against colon cancer, modifies hormone activity, antioxidant, antimicrobial,	Berries, grapes, red wine, soy foods, green tea dark chocolate, leafy greens, red cabbage. Eggplant. Reds and blues are the predominant color in this family
Organosulfur compounds: including isothiocyanates, allician, sulforaphane, indoles,	Boosts cancer fighting enzymes, blocks mutation, inhibits cholesterol production, may lower blood pressure, antitumor activity, detoxifier, cardiovascular risk reducer, non-specific immune booster	Onion family, cruciferous vegetables like cauliflower, mustard family. These are the palest of the phyto containing foods.

Nutritionists agree that giving children a high quality multi-vitamin can help keep them vibrant and healthy. However, it is important to understand that not all supplements are created alike. Some multi-vitamins can be extremely high in carbohydrates and sugar, and offer nutrients of poor quality (like rabbit meat offers poor quality protein) which are of an extremely low dosage. This supplement is excellent in that it has only 1g of sugar. It also contains the phytonutrients (plant based nutrients) that are listed in the screenshot above along with their unique health benefits. We would like this supplement to be bought in the "Outrageous Chocolate" flavor. The most suitable canister would be the one which is 360 g and which contains 60 servings (30 for Wencito & 30 for Galileo) so that it would last them the whole month. The canister costs $42.99 . We ask that our children be given this supplement despite it's cost, because we used to buy it for them, and it is vital for maintaining them in good health. If your agency can employ an

independent agency to teach our children how to wash their hands, you certainly can purchase this supplement, which is after all for their genuine well being.

Nutrients Required for Baby's Diet

Nature's One® purchases its organic milk from cooperatives supplied by family-owned farms that do not treat their cows with any hormones or antibiotics. You can be assured that the cows raised on these farms graze in organic pastures. The result of organic pastures is healthy cows and high quality organic milk. The Cornucopia Institute gave Nature's One® organic milk suppliers an "excellent" or a "4 cow rating". Learn more about Cornucopia Institute's research on organic milks. Cornucopia's Organic Dairy Report

Nature's One® organic commitment assures only organic and natural ingredients with no artificial flavors, sweeteners, colors, genetically modified ingredients, chemical processing like hexane solvents, pesticides or added growth hormones. Baby's Only Organic® formulas are manufactured in the U.S.A. No milk protein or dairy derivatives are purchased from China.

The following item (within the milk and supplement section of this report) that we would like to request is Toddler formula, primarily for Galileo's use as he is still three. We also think that Wencito (despite being five) should be given Toddler formula just once a day with the Amazing Grass Kidz Super Food Supplement, as a way of ensuring that he has ALL the nutrients that he needs for most of the day. During the rest of the day he can be given goat's milk, or organic fruit juices (Wencito never liked water much, though we tried to get him to drink it). This is what we would do were he in our care.

Organic Brown Rice Syrup, Organic Non-Fat Dry Milk, Organic High Oleic Sunflower Oil, Organic Soybean Oil, Organic Coconut Oil, Calcium Phosphate, Calcium Ascorbate (Vit. C), Organic Soy Lecithin, Calcium Citrate, Choline Bitartrate, Organic Vanilla, Taurine, Ferrous Sulfate, Inositol, Natural Vitamin E Acetate, Zinc Sulfate, Niacinamide, Vitamin A Palmitate, Calcium Pantothenate, Thiamin Hydrochloride (Vit. B1), Copper Sulfate, Riboflavin (Vit. B2), Pyridoxine Hydrochloride (Vit. B6), Folic Acid, Phylloquinone (Vit. K1), Potassium Iodide, Sodium Selenate, Biotin, Vitamin D3, Cyanocobalamin (Vit. B12).

We raised our boys on this formula and it always kept them healthy. All ingredients are organic, and even if it does include some soy, it is mostly dairy based. This superior Toddler Formula uses organic coconut oil (look at ingredient screenshot above) which is

a good source of omega-3 fatty acids (DHA). Coconut oil has many medicinal properties that promote health. It prevents cancer, childhood pneumonia, helps in diabetes, and has anti-microbial properties. Coconut oil also contains Lauric acid which is the major fatty acid found also in breast milk.

> Lauric acid is also prominent in the saturated fat of human breast milk, giving vital immune building properties to a child's first stage of life. Outside of human breast milk, nature's most abundant source of lauric acid is coconut oil.

Coconut Oil May Help Fight Childhood Pneumonia

Symptoms eased faster when it was added toantibiotic therapy, study found

Posted: October 30, 2008

Print

Recommend Be the first of your friends to recommend this. 0 tweet Share This

Related Articles
Join a Discussion
More from Health

HealthDay

By Serena Gordon
HealthDay Reporter

THURSDAY, Oct. 30 (HealthDay News) -- Virgin coconut oil, added to antibiotic therapy, may help relieve the symptoms of community-acquired pneumonia in kids faster than antibiotic therapy alone, a new study finds.

Children who received coconut oil therapy along with antibiotics had fewer crackles (a wheezing sound in the lungs), a shorter time with an elevated respiratory rate and fever, better oxygen saturation in the blood, and shorter hospital stays, according to the study.

Organic coconut oil seems to be very effective in fighting viruses. Go to:

http://www.coconutoil.com/viruses.htm

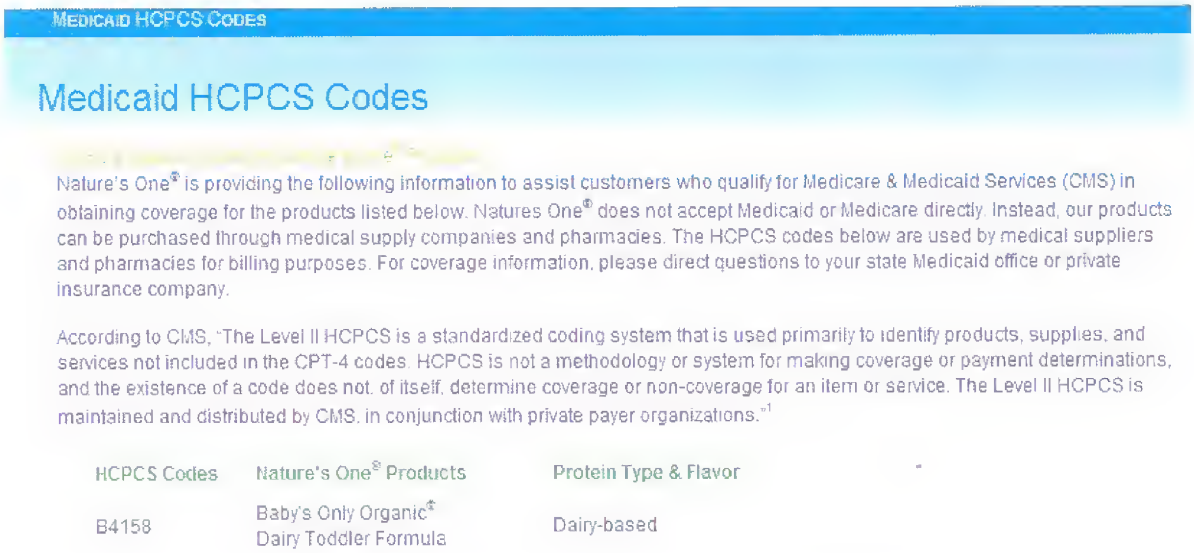
A screenshot from this site, (shown below) states that coconut oil is one of nature's best germ fighters.

> Instead of relying on man-made pharmaceuticals for everything, many are now turning to natural methods to boost the body's immune system and resist harmful viruses and micro-organisms naturally. Coconut oil is truly one of nature's best "germ fighters."

Last, but not least, coconut oil appears to have anti-ageing effects. A screenshot below from a site tells the following true story.

> Several years ago I met an old couple, who were only a few years apart in age, but the wife looked many years younger than her doddering old husband. She was from the Philippines, and she remarked that she always had to cook two meals at the same time, because her husband couldn't adapt to her traditional food. Three times every day, she still prepared her food in coconut oil. Her apparent youth increased my interest in the effects of coconut oil.

Because of the valid reasons that we have stated, and because both the Amazing Grass supplement and the Toddler Formula are rich in the top five nutrients that pediatricians recommend for children, we ask that they be purchased for our sons. The Baby's Only Dairy Based Organic Toddler Formula comes in 12.7 oz. canisters which contains all the vitamins plus DHA and ARA, and costs $9.99. The canister should last like around two weeks.



MEDICAID HCPCS CODES

Medicaid HCPCS Codes

Nature's One® is providing the following information to assist customers who qualify for Medicare & Medicaid Services (CMS) in obtaining coverage for the products listed below. Natures One® does not accept Medicaid or Medicare directly. Instead, our products can be purchased through medical supply companies and pharmacies. The HCPCS codes below are used by medical suppliers and pharmacies for billing purposes. For coverage information, please direct questions to your state Medicaid office or private insurance company.

According to CMS, "The Level II HCPCS is a standardized coding system that is used primarily to identify products, supplies, and services not included in the CPT-4 codes. HCPCS is not a methodology or system for making coverage or payment determinations, and the existence of a code does not, of itself, determine coverage or non-coverage for an item or service. The Level II HCPCS is maintained and distributed by CMS, in conjunction with private payer organizations."[1]

HCPCS Codes	Nature's One® Products	Protein Type & Flavor
B4158	Baby's Only Organic® Dairy Toddler Formula	Dairy-based

Indeed, it seems (look at screenshot above) that in some cases Medicaid may even help.

A chart depicting the nutritional content of this Toddler Formula in comparison with cow's milk and other conventional brand name formulas has been included in this report, but can also be found at this link:

http://www.naturesone.com/pdf/N1-LeadingDairyBrands.pdf#view=FitH,0

Eggs For The Boys' Consumption

We definitely want our boys to consume organic eggs around three times a week. We also want any food prepared for them that requires eggs to contain organic eggs. We do not care if the eggs are white or brown, as long as they're organic and have the percentage of DHA stated on the carton. We will state our preferred brands of eggs, but first we wanted to state that our reason for insisting on organic eggs over simply cage free and vegetarian fed is that the feed provided to the hens who lay organic eggs is organic as well (thus more nourishing, which enhances the nutritional value of the egg), and eggs laid by hens who have been sick cannot be sold as organic. So organic guarantees optimum nutritional value and hygiene standards as the following screenshots on the next page (from our preferred brand for the boys) will show.

The brand that we most prefer for our boys is that of Country Hen Organic Eggs, as they are not only of high quality but also contain six times the amount of omega-3's that what are found in normal eggs. The high percentage of omega-3 in the eggs are due to the high omega-3 organic feed which the hens are given.

A carton of six Country Hen Organic Medium Brown Eggs can be purchased for $2.89. The carton should last our boys a week if each of them is given one egg every two days in a meal.

The screenshot to the right shows why this company produces high quality eggs. Their hygiene standards are excellent, and they treat their hens very humanely . The hens live in very clean barns (in comparison with corporate factory farms).

Certified Organic Ingredients

These are the basics of our feed. We buy directly from organic farmers. These farmers use no pesticides, herbicides, and use only natural manures and rotate their crops periodically. The farmers must present their certificates to us before we buy from them. Finally, our mill, our feed that we mix, our hens and our eggs are certified each year by an independent agency – NFC.

High in OMEGA-3's

Our eggs contain six times the amount of Omega-3's in the normal eggs. Our feed, which we mix in our own mill, contains rich sources of the essential long chain polyunsaturated fatty acid. Omega-3's help reduce blood pressure, blood clots, heart disease, arrhythmia and cancer. They are also the primary constituents of retinas and our brain. Mother's milk contains Omega-3's, which support the development of the child's brain.

Feathered Friends Enjoying the Sun

When the weather is nice, the birds go out and enjoy their sun-filled porches.

Hens in the Barn

These hens actually have space to move around and are not cramped up with thousands of hens as occurs on factory farms. It is the humane treatment of animals that live in hygienic conditions, which serves to prevent disease outbreaks on a farm, and results in a healthier product of high quality.

The Country Hen is Unique

They live in sunlit spacious barns

They eat a certified organic feed

This feed is very high in Omega-3's

Producing simply healthy and delicious eggs!

SINCE 1988

Can you tell me about the treatment of your birds?

Can you tell me about the treatment of your birds?

More and more the public is becoming aware of the horrible conditions at commercial farms. Our hens are very pampered and allowed to roam free within sunlit barns and lay their eggs in automated nests or even on the barn floor if they wish. They also have the luxury of going outside on porches.

[Top]

Do you use antibiotics on your birds?

Do you use antibiotics on your birds?

We want to assure you that we do not use antibiotics at The Country Hen. It states right on the box that our chickens are free of antibiotics. We have never had an outbreak of disease here on the farm. We think this is due to the very strong organic feed that we give to the birds, the fact that they exercise and contact with floor litter and shavings where pathogens reside. If we ever did have an outbreak, we would have to treat with antibiotics, but we could not sell those eggs as organic.

The farm has been around since 1988 and has never had a disease outbreak, so they have a pretty good reputation for strict hygiene standards. If for some reason Country Hen is not available, then we have no objection to Organic Valley Large Brown Eggs in the half-dozen carton being bought for our boys. Of course, we ask that only Organic Valley Eggs with the amount of omega-3 indicated on the package be bought (screenshot shown below).

Large, 6 pack

Our family farmers treat their hens to an all-vegetarian organic diet rich in flax seed. Each of our "Heart Healthy" Omega-3 Organic Eggs provides an impressive 225mg of Omega-3, and is a good source of Vitamin E.

Since flax seed has many health benefits (which will be discussed later) and is rich in Alpha linolenic acid (ALA) which is a type of plant derived omega fatty acid (similar to

the fatty acids found in Salmon) these eggs are just bursting with nutritional value!

The Organic Valley Eggs that we prefer for our sons (nutrition facts shown to the right) are a good source of Vitamin E and protein in addition to their substantial amount of Omega-3 (225mg in each egg). Organic Valley obtains their eggs from organic family farms, so that the lack of hygiene and humanity that is so rampant on factory farms is simply not an issue here. The half-dozen container that we want, can be purchased for $2.79. It should last our boys a week if each of them is given one egg every two days in a meal. We prefer that the eggs be prepared boiled and then cut into bite size pieces, or if fried, that they be fried in 365 extra virgin olive oil, as this oil has many health benefits and is high in healthy saturated fats (extra virgin coconut oil is also in this category). We will be talking about oils later on in this report, but will now explain why we think that eggs are a good alternative to frequent meat consumption.

Nutrition Facts

Serving Size 1 egg (50g)
Servings Per Container 6

Amount Per Serving	
Calories 70	Calories from Fat 35
	% Daily Value*
Total Fat 5g	8%
Saturated Fat 1.5g	8%
Trans Fat 0	
Cholesterol 225mg	75%
Sodium 85mg	4%
Total Carbohydrate <1g	0%
Protein 7g	14%

Vitamin A 6% • Vitamin C 0%
Calcium 2% • Iron 4%
Vitamin E 10%

*Percent Daily Values are based on a 2,000 calorie diet.

USDA ORGANIC

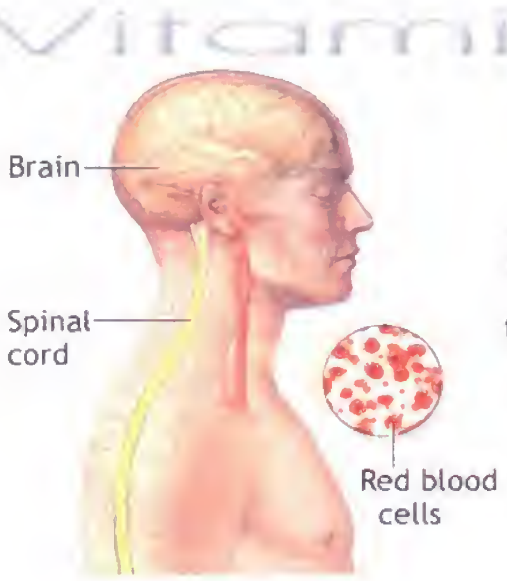
UPC= 0 93966 81180 3

Ingredients

Grade A Organic Eggs.

Storage and Handling

We of course prefer the eggs to be boiled instead of fried, as it is easier for a young child to grasp the egg and eat it. If the eggs are fried, we want them to be cooked until the yolk is well done (the same applies if the egg is being boiled, it must be thoroughly cooked). Afterwards we want the fried egg to be cut into pieces that are manageable for a toddler (this applies also for Wencito who is five).



The boys used to eat whole grain cereals with egg yolks when they were with us. We knew that eggs were a good source of many nutrients. Organic eggs are a good alternative to frequent meat consumption because they can provide a child with Vitamin B12 (a vital nutrient from mostly animal sources) without the occasional risk or high cost that is commonly associated with purchasing and eating a lot of meat.

Organic eggs are rich in the following nutrients (also illustrated in the screenshot on the following page): They are a source of 1) healthy protein and fat, 2) they contain the Vitamins A, D, B12, B2, niacin, and folate, 3) the carotenoids Lutein and Zeaxanthin, 4) choline, and 5) the eggs that we are requesting are also a good source of Vitamin E and Omega-3 fatty acids.

Carotenoids are natural fat-soluble pigments that are found in certain plants (they are briefly mentioned on page 42 of this report). These pigments can range from bright red, to orange, and yellow, and are responsible for the coloration of several vegetables. Perhaps one of the best known carotenoids is Beta Carotene, though it is only one of several. They serve as antioxidants and are converted by the body into Vitamin A mostly in the liver and the intestine. About 10% of

Carotenoids quick review

- **Description:** natural fat-soluble pigments found in certain plants, including lutein, astaxanthin, canthaxanthin, zeaxanthin, and capsorubin.
- **Health benefits:** protectagainst some cancers, macular eye disease and cardiovascular problems, help to rejuventate the body by promoting the growth of healthy cells.
- **Sources & dosage:** naturally present in edible leaves, flowers, and fruits, and are readily obtained from flowers, berries, and root tissue.

88

An Organic Egg Really Does Do Your Body Good

Posted By Dr. Ben Kim on Mar 22, 2010 Healthy Eating Resources

Updated on March 22, 2009

If you've been staying away from eggs because you're afraid of raising your blood cholesterol level, I encourage you to review my article on what most doctors won't tell you about cholesterol.

The truth is that organic eggs are abundant in the following health-promoting nutrients:

- Healthy protein and fat
- Vitamins A, D, B12, B2, niacin, and folate
- Lutein and zeaxanthin, which are yellow and orange carotenoids that can reduce your risk of developing cataracts and age-related macular degeneration
- Choline, a nutrient that is essential to normal cell structure and function and proper signaling between regular cells and nerve cells

dietary carotenoids are converted to Vitamin A in the body, and contribute 25% of our total Vitamin A. The two carotenoids which are present in organic eggs (lutein and zeaxanthin) also seem to protect the skin from the perils of excessive ultraviolet light exposure (as the screenshot below shows).

In addition to playing pivotal roles in ocular health, lutein and zeaxanthin are important nutrients for the prevention of cardiovascular disease, stroke, and lung cancer. They may also be protective in skin conditions attributed to excessive ultraviolet (UV) light exposure. Lutein and zeaxanthin inhibit lipid peroxidation, a likely factor in the etiology of both retinal and cardiovascular disease. Lutein and zeaxanthin can inhibit thickening of the walls of carotid arteries and LDL-induced migration of monocytes to human artery cell walls. Skin exposure to UV rays generates reactive oxygen species, inflammation in skin cells, and erythema. Lutein and zeaxanthin may prevent cellular damage in these conditions by quenching singlet oxygen or neutralizing photosensitizers. Intake of dietary antioxidants, including lutein and zeaxanthin, reduces this inflammatory response, as carotenoids are poor absorbers of UV light.

Protection against too much UV exposure is especially important in small children (regardless of their pigmentation) as their skin is very delicate and sensitive, and we have noticed on several visits that our sons are extremely tanned (especially Galileo). This is worrisome to us because there has been a history of skin problems in their father's family. While we understand that tanning is the body's natural way of protecting itself against extreme sunburn when overexposure to UV occurs, and that some UV exposure is necessary for the body to manufacture Vitamin D, we feel that in this case the tendency to

According to research just one severe sunburn in childhood doubles the chances of developing a melanoma later in life. Perhaps if they were given better food their potencial to develop certain conditions would be greatly reduced, which is why in light of their frequent UV overexposure we believe that the organic eggs that we are requesting can actually prevent (or at least greatly diminish) the harm that can result from too much UV radiation.

NOTE: The Environmental Working Group (EWG), which is a non-profit, Washington D.C. based research organization, investigated the effectiveness and potential hazards of thousands of sunscreens. They found that the majority of these products are deceivingly ineffective, and may be dangerous. There are three kinds of ultraviolet light: 1) UVA, 2) UVB, and 3) UVC. Many sunscreen lotions guard against UVB rays, but yet offer no protection from dangerous UVA rays. Since it is the UVB rays in sunlight that converts cholesterol found in the skin into vitamin D, these sunscreens block Vitamin D production while leaving one vulnerable to UV radiation (see doctor's article at: http://drbenkim.com/natural-sunscreen.htm) . In many cases the chemical ingredients frequently used in such sunscreens are unstable and break down when exposed to sunlight thus making the product only minimally effective.
All the other chemicals are absorbed into the bloodstream and body tissue , which is not a good thing for any child. Oxybenzone , which is a chemical used widely in sunscreens was last reviewed (prior to recent studies) in the 1970's. Recent studies have found significant new evidence of it's toxicity. Nearly 600 sunscreens sold in the U.S. contain oxybenzone, including products by Hawaiian Tropic, Coppertone, and Banana Boat. This chemical is known to disrupt the endocrine system and to speed the progress of skin cancer. Given the history of skin problems in their father's family we demand that our boys not have any conventional sunscreen put on them. There are also other chemicals in conventional sunscreens that are known to disrupt hormone activity, cause allergic reactions, damage cells, and to accumulate in both the body tissue as well as in the environment.

Product Description

Product Description

Ingredients: Non-Nano Particle Zinc Oxide (24.8%), Grape Seed Oil, Organic Sunflower Oil, Caprylic/Capric Triglycerides (derived from Coconut Oil), Soy Wax (Non-GMO), Organic Olive Oil, Organic Plum Kernel Oil, Organic Sesame Oil, Candelilla Wax, Organic Hemp Seed Oil, Organic Macadamia Nut Oil, Organic Cocoa (Fair Trade), Organic Green Tea, Vitamin E Oil Natural skin care products are very important, specifically sunscreen because of how often it needs to be applied and the concern that chemicals can be absorbed into the skin. You will find that many of the so called "natural products" don't seem so natural after reading a long list of ingredients that are hard to pronounce or that you may have never heard of. For this reason we have started our company, Loving Naturals, created out of the desire to use the most safe and natural products on our children and yours. You can be assured, we will earnestly research every ingredient we use, use the most natural ingredients that are available and always disclose every single ingredient. This is our promise to you! Please visit our website for more details on the ingredients we use.

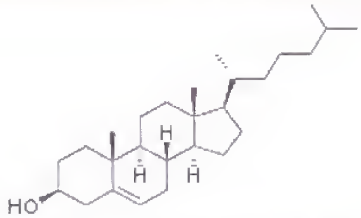
According to the EWG the top five sunscreen products are all natural, among which are included the following brands: 1) Loving Naturals Sunscreen, 2) Heiko Kids, 3) California Baby Sunblock, and 4) Badger Sunscreen. We wish that if any sunscreen be put on our sons that it be ONLY from the brands mentioned here. Our first preference would be Loving Naturals (whose picture and ingredients are listed above). It has a SPF (sun protection factor) of 30 which is generally the recommended amount. It should be noted that Zinc Oxide and Titanium Oxide are not chemicals but natural mineral compounds. Some sunscreen manufacturers have created a clear product using zinc oxide in the form of nano-size particles, which has raised concerns about potential toxicity, so the best sunscreens use non-nano particle Zinc Oxide (such as our preferred sunscreen above). Sunscreen is only necessary if one is going to be exposed for a long time to intense sun.

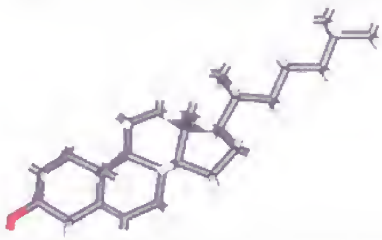
These words were written on Dec. 1st 2011 (a year and a half after I wrote the above) : I had been concerned because my boys while under Ana's "care" have experienced on several occasions extreme sunburn, and my husband's family have had skin problems. When they were with us I never put sunscreen on them, but would make sure that when we went out they had clothing which covered them sufficiently (of cotton and/or thin material) without overheating them. I also believed in using hats in the summer. Since nevertheless, they have been so badly burned in the past I had listed some natural non-toxic sunscreens above. I omitted half of this section (which is why it jumped to pg 90), and will also omit the Sunscreen and sunburn section among the reference articles written by others that are meant to accompany this report which I wrote. I do this because based on my research I think that as long as the child has clothing which covers the body sufficiently, and is not consistently overexposed to the glaring sun, sunscreen is not necessary. Nevertheless, I leave the above page (which was scanned and then converted to pdf, for my complete pdf version of this unfinished report was in the flashdrive that was stolen along with my laptop on May 5th 2011 by Ana's scum buddies) so that it can be known which sunscreens I would prefer. I do not think that sunscreen is necessary, we are now in winter, and I do not expect this crazy situation to drag on into a 4th year to the spring and summer of 2012. However, just to leave it in writing, I prefer the above sunscreens and am totally opposed to any type of conventional sunscreen, which far from protecting a person's skin can end up causing skin cancer. If I was able to scan all the pages of the stolen report it is because I used to print out the segments of my nutrition report as I wrote them. I had to cease working on this report in late October of 2010 in order to begin work on the Refutation Report which refuted some bogus rigged evaluations done on my traumatized sons (the report can be read at this link:http://www.archive.org/stream/RefutationsOfBiasedEvaluationsDoneOnOurSonsCorrectedVersion/RefutationOfBiasedEvaluationsDoneOnOurSons-corrected#page/n0/mode/2up). My husband was told a little over a month ago that the psychologist who did these evaluations (and who placed several stigmatizing life-damaging labels on my sons) died of cancer (I think my husband said that this occurred in October of 2011) .

Though eggs may have a significant amount of cholesterol, cholesterol itself is not really as harmful as most people have been led to believe. Actually, it is damaged cholesterol (which results from extreme levels of heat and certain processing techniques) that converts the cholesterol in foods into a harmful substance.

Foods can be well cooked without having to be overcooked, as certain foods can be hazardous when rare done (such as meat and eggs).

Cholesterol





The body produces cholesterol in the liver. Any cholesterol not produced in the liver comes from the foods that we consume. However, what is not understood is that the amount of cholesterol that the liver produces varies according to how much cholesterol one has consumed in foods. If one consumes little cholesterol, the liver will make more cholesterol to make up for the deficiency, and if one consumes larger quantities of cholesterol, the liver will simply produce less cholesterol in order to maintain a balance. This is why a low cholesterol diet does not decrease blood cholesterol by more than a few percent. This is also why vegans, who do not consume any cholesterol , still have enough cholesterol in their bodies to assure proper bodily function.

Regulation of cholesterol synthesis [ed

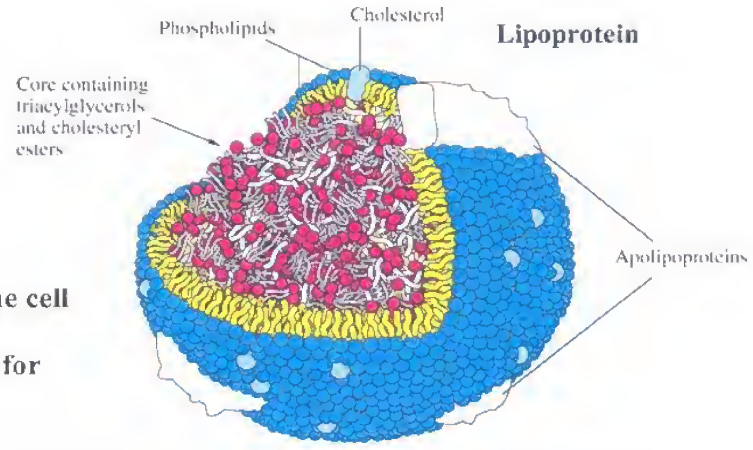
Biosynthesis of cholesterol is directly regulated by the cholesterol levels present. though the homeostatic mechanisms involved are only partly understood. A higher intake from food leads to a net decrease in endogenous production, whereas lower intake from food has the opposite effect. The main regulatory mechanism is the sensing of intracellular cholesterol in

The screenshots above and to the right explain what we have just stated.

About 8 hours after you have eaten a meal, the liver will absorb the dietary cholesterol and the triglycerides it needs from the bloodstream. However, If the liver doesn't find any available dietary cholesterol it will have to produce cholesterol and triglycerides by itself. (If the liver didn't produce cholesterol by itself, than people who don't consume animal foods, such as vegetarians or vegans, wouldn't have the needed amounts of cholesterol in their blood and they surely could not have survived.)

Cholesterol is essential for good health , but what is it and what does it do?

First what is known as HDL and LDL (commonly called Good and Bad Cholesterol) are not really cholesterol (though they do contain cholesterol among other things) but lipoproteins. They stand for High Density Lipoprotein and Low Density Lipoprotein. Lipoproteins are a compound of lipids (fats) and protein, through which lipids travel through the blood. The lipoproteins do not only carry cholesterol but also fat, and fat-soluble nutrients such as vitamins A, D, E and K, and coenzyme Q_{10} (which is a heart healthy, fat-soluble antioxidant that is found in nearly all cell membranes). Cholesterol is found in foods that are derived from animal sources, whether it be meat, poultry, and fish, or milk, eggs, butter, and cheese.

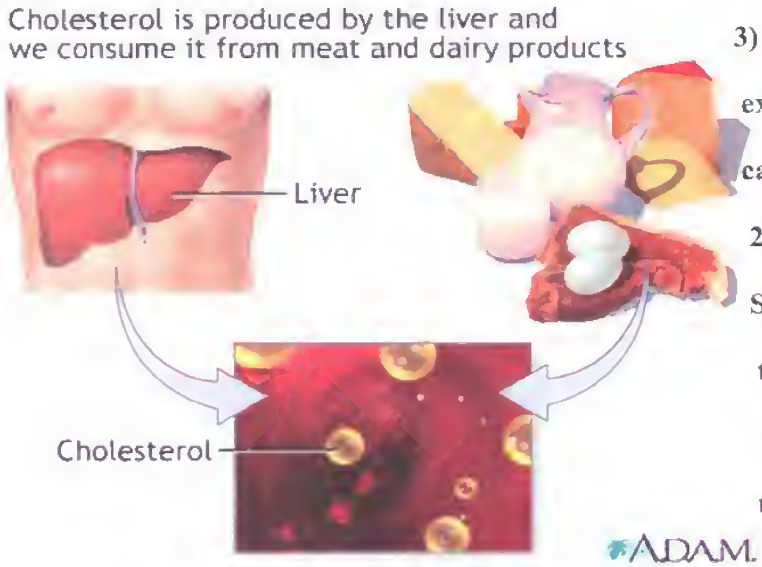


Cholesterol has five main functions that are essential for human health (shown in the screenshot below). Cholesterol is an essential component in the cell membranes of mammals, and is necessary for cellular health.

1. **Cholesterol** is used by the body to manufacture steroids, or cortisone-like hormones, including the sex hormones. These hormones include testosterone, estrogen and cortisone. Combined, these hormones control a myriad of bodily functions.
2. **Cholesterol** helps the liver produce bile acids. These acids are essential for digestion of fats and ridding the body of waste.
3. **Cholesterol** acts as a cell to interconnect "lipid molecules". A lipid molecule is needed to stabilize our cell membranes. Without cholesterol, our bodies ruins.
4. **Cholesterol** is an important part of the myelin sheath which is a neuron consists of fat-containing cells that insulate the axon from electrical activity. It is to ensure our brain functions properly by aiding route of electrical impulses. Without it, our brain would be difficult to focus and might lose of memory.
5. Finally, **Cholesterol** has lots of beneficial on the human body immune system.

Low cholesterol levels in small children can disrupt growth as well as the development of body systems. It should also be noted that human breast milk contains significant quantities of cholesterol, indicating it's importance in child development.

Normally the body can recompensate for the lack of dietary cholesterol by just making more of it's own in the liver. However, certain conditions can impede the body's natural G-D given ability to produce it's own cholesterol, thus leading to low cholesterol levels, a condition which is called hypo cholesterolemia. Some of the conditions which can lead to hypo cholesterolemia are 1) malnutrition, 2) manganese deficiency, 3) hyperthyroidism (of which excess soy consumption can be a cause, and which is discussed on page 28 of this report), and 4) liver disease. Since cholesterol is also necessary for the creation of Vitamin D in the body, the cholesterol from the organic eggs that we are requesting will help our sons' bodies produce Vitamin D, while the lutein and zeaxanthine in the eggs will protect their skin if overexposed to UV rays. For nutrition is a vital science in preventive medicine that cannot be disassociated from health, and as such children who are in the prime of development should be it's main beneficiaries.



Within cells, cholesterol is the precursor molecule in several biochemical pathways. In the liver, cholesterol is converted to bile, which is then stored in the gallbladder. Bile contains bile salts, which solubilize fats in the digestive tract and aid in the intestinal absorption of fat molecules as well as the fat-soluble vitamins, Vitamin A, Vitamin D, Vitamin E, and Vitamin K. Cholesterol is an important precursor molecule for the synthesis of Vitamin D and the steroid hormones, including the adrenal gland hormones cortisol and aldosterone as well as the sex hormones progesterone, estrogens, and testosterone, and their derivatives.

Some research indicates that cholesterol may act as an antioxidant.[8]

Yogurts & Probiotic Beverages

Kids who eat yogurt or other foods with live beneficial bacteria may benefit from fewer colds

A very important part of our sons' diet was their daily consumption of yogurt two times a day. It is our firm belief that the daily consumption of organic yogurt (with live active cultures), along with an organic diet rich in whole grains, fruits, and vegetables, as well their organic supplements, kept them super healthy. The scientific evidence which shows that organic yogurt with live active cultures has tremendous health benefits is simply overwhelming to the point that it cannot be denied.

Yogurt, as well as yogurt-like drinks such as kefir, are called probiotics. Probiotics literally means "for life" ("Pro" meaning "in favor of" in Latin, and "bios" meaning "life" in Greek) and refers to the living organisms that are present in those foods, and which have health benefits if taken in adequate amounts.

The six live cultures that were present in our sons' yogurt and kefir are the following: 1) Lactobacillus bulgaricus, 2) Streptococcus thermophilus, 3) Lactobacillus acidophilus, 4) Bifidus, 5) Lactobacillus casei, and 6) Lactobacillus rhamnosus.

Numerous scientific studies have proven the diverse health benefits of yogurt consumption as shown in an article written by a pediatrician at the link below:

http://www.drgreene.com/qa/surprising-uses-and-benefits-yogurt

and which has also been included in this report. All of these probiotic cultures have been intensely studied, though the two probiotic species that have been the most studied are Bifidobacterium and Lactobacillus.

These live active cultures help to increase probiotic cultures (flora) in the gut. Many unfortunately do not realize how crucial gut flora are for maintaining one's health. We state that it is unfortunate because their lack of appreciation for these beneficial bacteria can lead them to make poor diet choices that can even negatively affect such an important part of their body's defenses, as these bacteria need regular replenishing. Several factors could diminish the amount of flora in one's body, including poor nutrition and pollution (which is a double peril with conventional food and it's pesticides). Gut flora consists of microorganisms that live in the digestive tract, and their presence is extremely important. Consider this, as soon as an infant is born, bacteria begins colonizing his digestive tract, so that by the second year of his life, his flora resembles that of an adult.

The 4 major functions of the gut are:

1. Transporting the food;
2. Processing the food physically by breaking it up (chewing), mixing, adding fluid etc.
3. Processing the food chemically by adding digestive enzymes to split large food molecules into smaller ones.
4. Absorbing these small molecules into the blood stream so the body can use them.

Bacteria in the gut fulfill numerous useful functions for humans, including: digestion of unused energy substrates (substrate being the substance on which an enzyme acts), stimulating cell growth, and repressing the growth of harmful microorganisms.

Useful Terms To Know

Gut: part of the alimentary canal , and especially the intestine or stomach

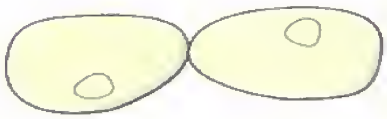
Gut flora: microorganisms that live in the digestive tract. These are good bacteria which keep the body healthy and assist in vital body functions.

Polysaccharide: A complex carbohydrate. It is a long-chain sugar composed of monosaccharides.

Monosaccharide: Any of the simple sugars that serve as building blocks for carbohydrates.

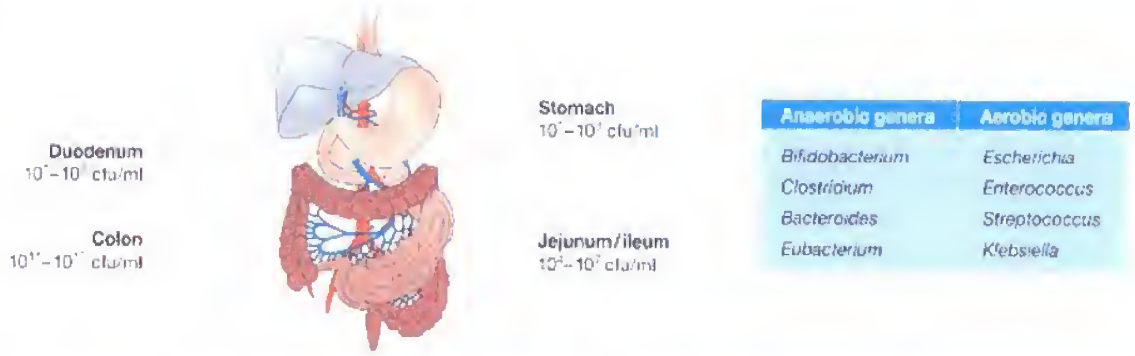
Carbohydrate: An organic compound which includes sugars, starches, celluloses, and gums and which serves as a major energy source in the diet of animals.

Cfu- This means Colony Forming Units, and is used as a way of measuring quantities of bacteria. The idea is that a single bacterium can grow and become a colony through continuous binary fission (the way that a cell reproduces by splitting itself into two).



Animation showing the complete process of binary fission.

A



Anaerobic genera	Aerobic genera
Bifidobacterium	*Escherichia*
Clostridium	*Enterococcus*
Bacteroides	*Streptococcus*
Eubacterium	*Klebsiella*

B

Protective functions	Structural functions	Metabolic functions	
Pathogen displacement	Barrier fortification	Control IEC differentiation and proliferation	Ferment non-digestible dietary residue and endogenous epithelial-derived mucus
Nutrient competition	Induction of IgA	Metabolize dietary carcinogens	Ion absorption
Receptor competition	Apical tightening of tight junctions	Synthesize vitamins e.g., biotin, folate	Salvage of energy
Production of anti-microbial factors e.g., bacteriocins, lactic acids	Immune system development		

Functions of the intestinal flora. (A) Bacteria density increases in the jejunum/ileum from the stomach and duodenum, and in the large intestine, colon-residing bacteria achieve the highest cell densities recorded for any ecosystem. The most common anaerobic and aerobic genera are listed. (B) Commensal bacteria exert a miscellany of protective, structural and metabolic effects on the intestinal mucosa.

previous | next

close window

Gut flora prevents allergies by training the immune system to respond only to pathogens. This is important because an allergy is simply an overreaction on the part of the immune system to non-harmful antigens (an antigen is a molecule that is recognized by the immune system). Therefore, if the immune system only responds to harmful bacteria not only are allergies prevented, but auto immune diseases as well. Auto immune diseases occur when the immune system overreacts, and responds unnecessarily against substances and tissues that are normally present in the body (as if they were pathogens). As a result of this the body actually attacks its own cells.

Regular consumption of organic probiotics can greatly prevent these conditions in children by simply avoiding a deficiency of these beneficial bacteria.

Parents should be aware that studies into the potential causes of allergies have discovered that the gut flora of infants and young children that either had, or later developed allergies, have a different composition from the gut flora of those children that did not suffer from allergies, and so they were at higher risk of having the harmful species Clostridium Difficile (a bad bacteria present in the intestines) and Staphylococcus Aureus (also known as "Staph aureus" or a Staph infection), while having a lower prevalence of Bacteroides (a Bacillus, or rod-shaped, bacteria that benefits the body by excluding potential pathogens from colonizing the gut) and Bifidobacteria (Gut flora bacteria which aid in digestion and are associated with a lower incidence of allergies. They also may prevent some forms of tumor growth).

Since the ability of the immune system to recognize and fight harmful bacteria, while at the same time leaving non-harmful bacteria alone, is usually developed early on during a child's infancy, a lack of these good bacteria during early life can lead to an inadequately trained immune system which overreacts to antigens (in this case a non-harmful molecule detected by the immune system, as antigens can be either harmful or non-harmful).

There have been studies on probiotics for several years, among which was a 1998 study (Allergy Clin Immunol 1998;102:57-64.) which discovered that consuming the live culture lactobacillus can increase interleukin 12 (also called IL-12), which is a substance that is responsible for preventing the immune system from developing antibodies against anything in one's diet (an exaggerated immune response to a food consumed).

A study the following year (Immunology and Allergy Clinics of North America. August 1999; 19(3)) found that lactobacillus also decreases the antibodies that are erroneously produced by the immune system against the allergenic food when consumed.

While helping the body's immune system recognize only those antigens which are harmful, probiotic cultures such as lactobacillus also strengthen the immune system, and is equally as effective fighting against viruses such as rotavirus (the most common cause of severe diarrhea among infants and young children), and other viral infections according to a 2000 study published in the Journal Of Pediatric Gastroenterology & Nutrition (J Pediatr Gastroenterol Nutr.2000;30:54-60.).

Lactobacillus is a highly beneficial probiotic found in organic yogurts with live active cultures (screenshot to the right).

A random search of the Journal Of Pediatric Gastroenterology & Nutrition shows how the use of Lactobacillus GG (a probiotic strain of "friendly" bacteria found in the intestines, and which was in our sons' organic yogurt) has been used in the treatment of various maladies (screenshot of study results to the right). This probiotic has already been used successfully to treat Clostridium Difficile Colitis, which is an infection of the colon that is caused by the Clostridium Difficile bacteria that is mentioned on page 97 of this report, and which will also be discussed on the following page.

****
Treatment of Recurrent Clostridium difficile Colitis With Lactobacillus GG

Biller, J. A.; Katz, A. J.; Flores, A. F.; Buie, T. M.; Gorbach, S. L.
Journal of Pediatric Gastroenterology & Nutrition. 21(2):224-226, August 1995.
Treatment of Recurrent Clostridium difficile Colitis With Lactobacillus GG.

FREE PDF (229 KB) - Favorites

****
Lactobacillus Gg Inhibits Neutrophil Migration By Down-Regulating Chemokine Receptor-2 Gene

Michail, Sonia; Abernathy, Frank
Journal of Pediatric Gastroenterology & Nutrition. 43(4):E16, October 2006.
id="PS"> LACTOBACILLUS GG INHIBITS NEUTROPHIL MIGRATION BY DOWN-REGULATING CHEMOK...

FREE PDF (696 KB) EPUB - Favorites

****
Recovery of Chronic Clostridium Difficile Colitis With the Use of Lactobacillus Gg

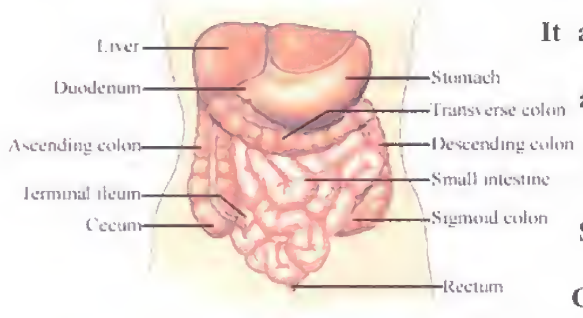
de Mola, O Loret; Gonzalez-Vallina, R; Muiños, W; Reeves-Garcia, J; Acosta, J
Journal of Pediatric Gastroenterology & Nutrition. 26(5):542, May 1998.
WITH THE USE OF LACTOBACILLUS GG [Abstracts: use of lactobacillus GG for the treatmen...

FREE EPUB - Favorites

****
103 LACTOBACILLUS GG ENHANCES IgA IMMUNE RESPONSE IN CROHN'S DISEASE

Malin, M; Suomalainen, H; Isolauri, E
Journal of Pediatric Gastroenterology & Nutrition. 19(3):355, October 1994.
103 LACTOBACILLUS GG ENHANCES IgA IMMUNE RESPONSE IN CROHN'S DISEASE.

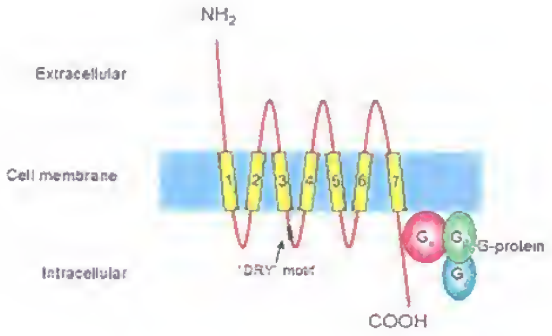
FREE PDF (120 KB) - Favorites



It also can been used to treat cryptitis (an abnormality of small intestinal or colonic tissue due to inflammation), according to the Wright State Boonshoft School of Medicine in Dayton, Ohio. It seems that by reducing the amount of Chemokine receptor-2 (or called CCR-2- look), which are receptor genes that play an important role in the migration of neutrophils (a type of white blood cell) across the intestinal epithelial cells (epithelium being a tissue composed of cells that line the

cavities and surfaces of structures throughout the body), the inflammation of cyptisis can subside , for it is the migration of these white blood cells called neutrophil that leads to the inflammation.

When lactobacillus was administered CCR-2 activity was inhibited, while inhibiting as well the migratory process of the neutrophils. In this way the intestinal inflammation was reduced, thanks to this strong probiotic culture.



Typical structure of a **chemokine receptor**, with seven transmembrane domains and a characteristic "DRY" motif in the second intracellular domain. Chemokine receptors are usually linked to a G-protein through which they signal.

0.14, n = 3, $P = 0.05$). The results of this study suggest that up-regulation of CCR-2 gene occurs during intestinal trans-epithelial migration of neutrophils and that down-regulation occurs with the probiotic Lactobacillus GG. Inhibition of CCR-2 can be the mechanism by which lactobacilli inhibit the process of neutrophil migration across the intestinal epithelial cells thus reducing intestinal inflammation in this model of cryptitis.

We are reporting the clinical course of three children with chronic Clostridium difficile colitis which did not respond to conventional therapy.

Two of the children are siblings; a male who is two-years-old and a female who is one-year-old. Both had persistent Clostridium difficile colitis for eleven months. The different treatment modalities included vancomycin, metronidazole and cholestyramine. The third child is a two-year-old female who had recurrent Clostridium difficile colitis for four months, which did not respond to the conventional therapy using metronidazole and cholestyramine.

Subsequently, all three patients were treated for a twenty-one day course with lactobacillus casei SP strain provided by Dr. SL Gorbach, made in Valiodairies, Helsinki, Finland. It was given in a dose of 125 mg q d , divided into two doses for twenty-one days. After completion of the therapy, all three patients exhibited a clinical resolution of Clostridium difficile colitis, both clinically and by stool examination. All three patients have been well for a total of five months post therapy without recurrence.

Conclusion: Children are at an increased risk of developing Clostridium difficile colitis secondary to over use of broad spectrum antibiotics for treatment of upper respiratory tract infections. The use of lactobacillus GG needs to studied further within a larger population or in a prospective study, in order to understand the potential for treatment. This could be done either as primary therapy or for refractory cases since there is the possibility that this might change the current thinking of antibiotic therapy as the primary mode of treatment.

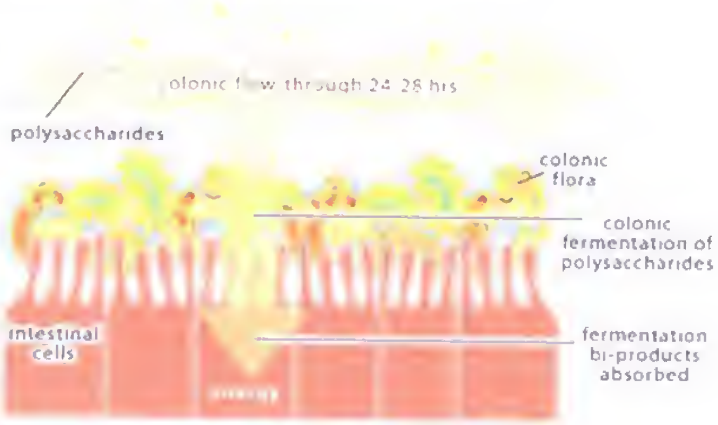
This fascinating May 1998 case from The Division of Pediatric Gastroenterology in Miami Children's Hospital of Florida (screenshot to the left) shows how Lactobacillus GG cured two small children that had Clostridium Difficile Colitis when conventional treatments failed to do so.

Among the seemingly endless wonders that probiotics bestow on human health (especially on children) are the following: 1) the gut flora makes Vitamin K and Vitamin B12. 2) the gut flora protects people from food poisoning.

3) Lactobacillus also provides long-term protection

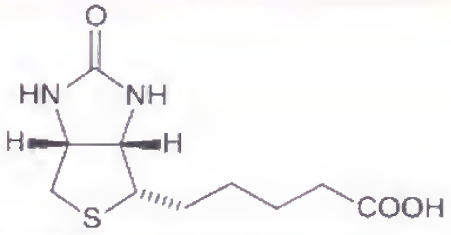
to the heart, and 4) the gut bacteria produce hormones that direct the body to store fat.

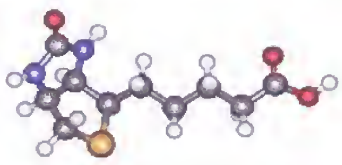
The gut flora is so vital for a great many of our bodies' functions, that if we would not have any flora we would find ourselves unable to use certain undigested carbohydrates, due to the fact that some types of gut flora have enzymes that human cells lack for breaking down certain polysaccharides (see pg 95 for term meanings). These flora turn those undigested carbohydrates into short-chain fatty acids using a type of fermentation known as saccharolytic fermentation. Among the acids that are produced through this process are acetic acid, propionic acid and butyric acid, which when used by the body's cells fulfill two functions: 1) providing a major source of useful energy and nutrients for the human body, and 2) helping the body to absorb essential dietary minerals such as calcium, magnesium, and iron.



In addition to providing essential nutrients that are absorbed by the body's cells, gut flora also promote cell growth itself through the synthesis (the process of creating) of Biotin (Vitamin B7, but also called sometimes Vitamin H). This crucial nutrient created by gut flora has a wide array of functions, from promoting cell growth , to aiding in the production of fatty acids as well as in the metabolism of fats and amino acids. Biotin also helps to maintain a steady blood sugar level and helps to strengthen nails and hair. Consumption of probiotic foods ensures a

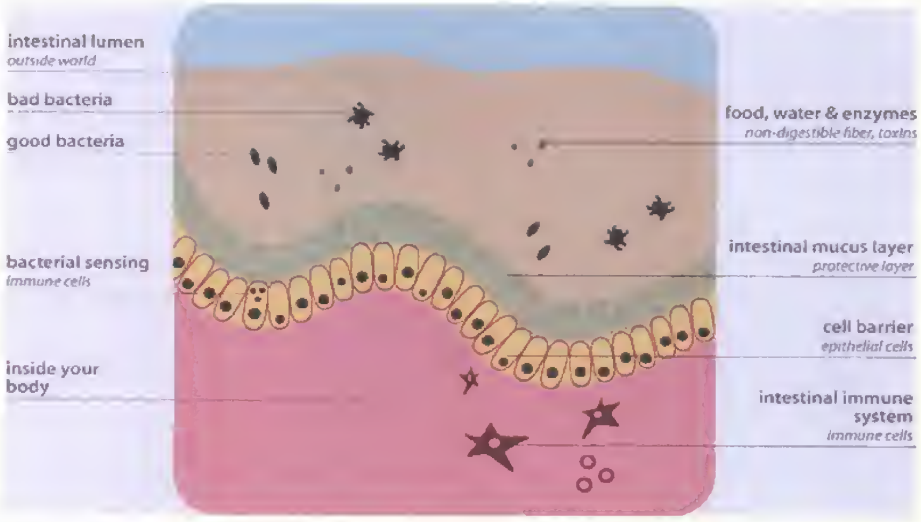
Biotin[1]



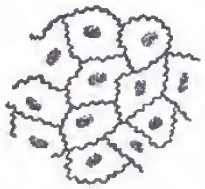


healthy presence of gut flora in the digestive tract to keep the body functioning properly.

UNDERSTANDING INTESTINAL MUCOSAL BARRIER FUNCTION



A membrane is a thin, flexible layer of tissue that covers, lines, separates, or connects cells or parts of an organism. A mucous membrane is a mucus-secreting membrane that lines all body cavities or passages that open to the outside. Mucosal surfaces are lined by epithelial cells. An epithelial cell is one of the closely packed cells forming the epithelium (below left) which is a membranous tissue covering internal organs and other internal surfaces of the body. They actually line the inner or outer surfaces of the body in continuous sheets. Epithelial cells do not have any blood vessels, but instead are supplied with oxygen and nutrients by the blood vessels that are in the connective tissue (a tissue that supports and binds other tissues) beneath it. All this may sound unnecessary, but it is vital to understanding how probiotics can benefit all aspects of the immune system. The epithelial cells that line mucous surfaces not only form a protective barrier that controls the interaction between the mucosal immune system and luminal contents, but they are also responsible for nutrient absorption and waste secretion. What is the mucosal immune system, and what are luminal contents?



The mucosal immune system is a part of the general immune system that is responsible for protecting mucous membranes from invasion by microbes that can be potentially pathogenic (disease causing). The mucosal immune system performs three main functions: 1) protecting the mucous membrane from infection, 2) preventing the uptake (or absorption) of antigens and microorganisms, and 3) moderating the immune response to the said antigens (see page 98 to review on how immune system recognizes pathogens). Some doctors consider it a separate functional entity from the general immune system due to it's unique features. At birth, a newborn's mucosal immune system is mostly undeveloped. It is only when intestinal flora start to colonize the baby's digestive tract that it's development is accelerated.

The luminal contents also can be considered an anatomic structure, especially the endogenous flora. There are two subcompartments of endogenous flora. Microbes within the bulk luminal contents play a relative small role in the body's economy, except for possible biotransforming functions. Organisms, predominantly anaerobes, also bind to specific receptors in the mucus layer overlying the epithelial cells and may play a more important, but perhaps a poorly understood role, including effects on epithelial cell gene expression. The importance of the endogenous flora is best illustrated by the result of their unintentional eradication during antibiotic therapy, when the pathogenic or toxigenic bacteria that replace them cause functional alterations and clinical symptoms.[7]

The mucosal immune system is considered as a separate functional entity quite independent of the systemic immune compartment, since it possesses unique anatomical features and is composed of specialized subsets of lymphoid

A lumen is the inner open space or cavity of a tubular organ, as of a blood vessel or an intestine, so "luminal contents" signifies what is contained within the lumen.

JN THE JOURNAL OF NUTRITION

© 2006 American Society for Nutrition J. Nutr. 136 2269, August 2006

Letters to the Editor

Prebiotics and Mucosal Barrier Function

Francisco Guarner*

Digestive System Research Unit, University Hospital Vall d'Hebron, P. Vall d'Hebron, 119-129, Barcelona 08035, Spain

There is ample experience with physiological stimulants of mucin secretion other than fibers. For instance, certain probiotic bacteria were shown to stimulate mucin secretion by intestinal epithelial cells, which resulted in protection against subsequent invasion by pathogens (10). Likewise we have found that stimulation of mucus secretion by epidermal growth factor protects against luminal aggressions both in the upper and lower intestinal tract (11,12). Neither probiotic lactobacilli nor epidermal growth factor are mucosal irritants, even if they stimulate mucin secretion on

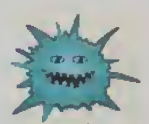
In summary, the study by Ten Bruggencate and co-workers demonstrates that dietary fructooligosaccharides do not affect intestinal barrier function in healthy men on a low calcium diet, as proven by the ^{51}Cr-EDTA test. The authors should consider revision of their conclusion, which is not supported by the data presented in the paper.

Manuscript received 5 April 2006.

As we have explained on the previous page, epithelial cells line mucosal surfaces which secrete mucous. The mucous secretion that is secreted by the mucous membranes is in reality a protective secretion that lubricates the passage of food in the gut, and also protects the epithelial cells. If this delicate system is somehow damaged, health problems can result, because the intestinal epithelial layer is an important barrier against antigen invasion. A study (of which a screenshot is shown above) states that probiotic bacteria (found aplenty in organic yogurt and kefir) stimulates this secretion which protects against pathogens. Study can be found at the following link:
http://jn.nutrition.org/cgi/content/full/136/8/2269

granulocyte

The granulocytes often take the first stand during an infection. They attack any invaders in large numbers, and "eat" until they die. The pus in an infected wound consists chiefly of dead granulocytes. A small part of the granulocyte community is specialized in attacking larger parasites such as worms.



macrophage

The macrophages ("big eaters") are slower to respond to invaders than the granulocytes, but they are larger, live longer, and have far greater capacities. Macrophages also play a key part in alerting the rest of the immune system of invaders. Macrophages start out as white blood cells called monocytes. Monocytes that leave the blood stream turn into macrophages.

dendritic cell

The dendritic cells are "eater" cells and devour intruders, like the granulocytes and the macrophages. And like the macrophages, the dendritic cells help with the activation of the rest of the immune system. They are also capable of filtering body fluids to clear them of foreign organisms and particles.

The screenshot to the left shows the different types of cells that are found in the immune system. Knowing the functions of these cells will enable comprehension of the study found at the link below, and included in this report.

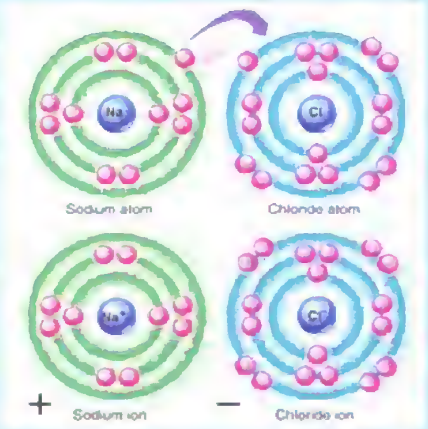
http:/gut.bmj.com/content/58/9/1291.abstract

Yogurt is one of the best known foods that contain probiotics which are considered of great dietary value because of their health promoting properties and therapeutic effects on various gastrointestinal diseases (as well as other diseases).

On page 101 of this report we explained how yogurt aids the body in the absorption of minerals such as calcium, magnesium, and iron. Bioavailability signifies the degree to which a substance (in this case a nutrient) becomes available to the body's tissues. Yogurt is not only a good source of protein , but also an excellent source of calcium and phosphorus. As is common knowledge, calcium is needed for strong bones, and also for the nerves to be able to carry

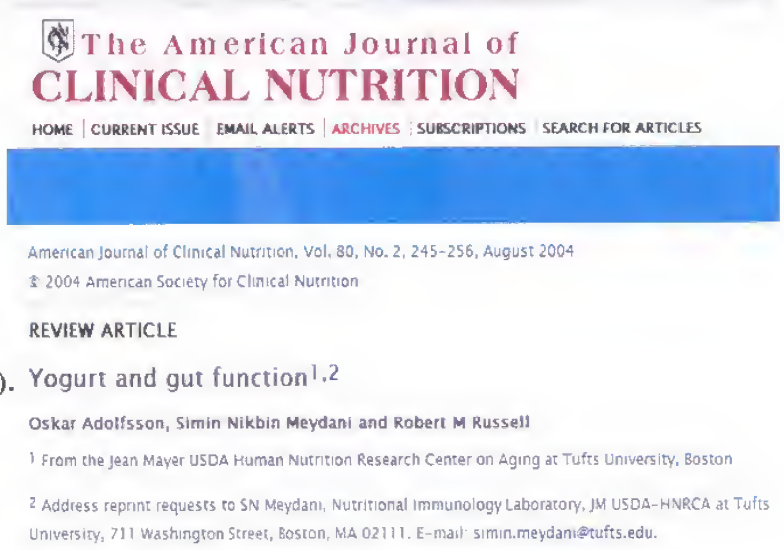
UNDERSTANDING IONIC NUTRIENTS

Everything is made up of atoms (including nutrients). Atoms contain protons, neutrons, and electrons.



Protons and neutrons are found in the nucleus (or center of the atom). Protons are positively charged particles, whereas neutrons have no charge (they are neutral). Electrons are negatively charged particles. They are the elements that surround the nucleus. In a neutral atom the number of protons and electrons are always the same. However, when an atom or a molecule (a group of atoms) loses or gains an electron it is no longer neutral , for it acquires either a positive or negative charge due to the now unequal balance of elements present in its structure. When the process just described occurs to the atom of a nutrient it becomes ionized, for it forms an ion (a charged particle). By doing so it acquires energy. The removal of electrons from the atoms causes the ion to have a higher energy. When this happens between two atoms one will be positively charged (the one that lost an electron) and the other will be negatively charged (the one that gained an electron). Since opposites attract, both ions will unite in an ionic bond, thus releasing energy. Some minerals are absorbed much more readily in the ionic forms.

messages, whereas phosphorus is also needed for the formation of teeth, bones, and nerve cells. On page 48 of this report we discussed the different pH levels that are present in various foods. Yogurt has a lower pH than milk , which means that it is more acidic. Due to yogurt's acidity the calcium and magnesium present in yogurt are mostly in ionized forms. On page 104 we explained what an ionized nutrient is, and how the body more easily absorbs ionized nutrients. The acidic pH of yogurt ionizes its calcium and thus facilitates intestinal absorption of that very calcium. An article published by The American Journal Of Clinical Nutrition (screenshot to the right) shows the differing views on yogurt in relation to gut function, while mentioning various studies. Below is a screenshot of an excerpt from the article (whose link is listed below). It seems (according to the studies cited below) that the ionized calcium in yogurt increases bone mineralization. The more mineralized a bone is, the harder and stronger it is. This article can be found at this link : http://www.ajcn.org/cgi/content/full/80/2/245%20



The American Journal of
CLINICAL NUTRITION

HOME | CURRENT ISSUE | EMAIL ALERTS | ARCHIVES | SUBSCRIPTIONS | SEARCH FOR ARTICLES

American Journal of Clinical Nutrition, Vol. 80, No. 2, 245-256, August 2004
© 2004 American Society for Clinical Nutrition

REVIEW ARTICLE

Yogurt and gut function[1,2]

Oskar Adolfsson, Simin Nikbin Meydani and Robert M Russell

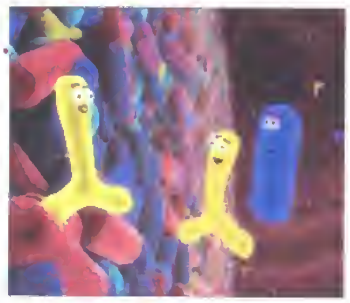
[1] From the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, Boston

[2] Address reprint requests to SN Meydani, Nutritional Immunology Laboratory, JM USDA-HNRCA at Tufts University, 711 Washington Street, Boston, MA 02111. E-mail: simin.meydani@tufts.edu.

Few studies have investigated the effect of yogurt-derived calcium on bone mineralization in animals (34, 38). Kaup et al (34) reported that yogurt-fed rats showed greater bone mineralization than did rats fed a diet containing calcium carbonate. These studies may suggest that the bioavailability of calcium in yogurt is greater and yogurt may increase bone mineralization more than do nonfermented milk products. However, there are currently no published studies that show a superior effect of yogurt on bone mineralization in human subjects.

These studies seem to suggest that the bioavailability of the ionized calcium found in yogurt is greater, and so can increase bone mineralization more than do non-fermented milk products.

Based on studies that we have done and knowledge that we have had for years, we believe entirely that probiotic foods such as organic yogurt are among the healthiest in existence. There is well documented longevity among certain ethnic groups that frequently consume yogurt (which we will be discussing in this report). All that we will say for the present is that such longevity is not surprising considering the fact that probiotics treat and prevent the following conditions showed in the screenshot below.



- Ameliorate vaginal (bacterial and yeast), urinary tract and bladder infections.
- Ameliorate inflammatory intestinal disorders, including inflammatory bowel disease (IBD).
- Ameliorate food allergies and inflammatory, allergic conditions like asthma and eczema.
- Reduce several risk factors for cardiovascular disease.
- Reduce several risk factors for intestinal cancers.
- Reduce the duration of gastroenteritis and rotavirus-induced diarrhea in infants.
- Reduce the rate of childhood respiratory infections.
- Ameliorate microbe-induced traveler's diarrhea.
- Help prevent tooth decay.

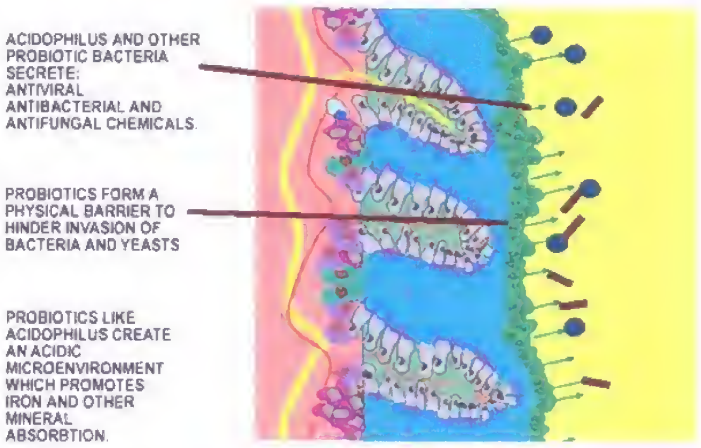
Another screenshot from the article whose link is provided on page 105 of this report, speaks of the benefits of yogurt consumption and it's effect on the diseases mentioned above.

In recent years, numerous studies have been published on the health effects of yogurt and the bacterial cultures used in the production of yogurt. In the United States, these lactic acid-producing bacteria (LAB) include *Lactobacillus* and *Streptococcus* species. The benefits of yogurt and LAB on gastrointestinal health have been investigated in animal models and, occasionally, in human subjects. Some studies using yogurt, individual LAB species, or both showed promising health benefits for certain gastrointestinal conditions, including lactose intolerance, constipation, diarrheal diseases, colon cancer, inflammatory bowel disease, *Helicobacter pylori* infection, and allergies. Patients with any of these conditions could possibly benefit from the consumption of yogurt. The benefits of yogurt consumption to gastrointestinal function are most likely due to effects mediated through the gut microflora, bowel transit, and enhancement of gastrointestinal innate and adaptive immune responses. Although substantial evidence currently exists to support a beneficial effect of yogurt consumption on gastrointestinal health, there is inconsistency in reported results, which may be due to differences in the strains of LAB used, in routes of administration, or in investigational procedures or to the lack of objective definition of "gut health." Further well-designed, controlled human studies of adequate duration are needed to confirm or extend these findings.

- ABSTRACT
- INTRODUCTION
- NUTRITIONAL VALUE OF YOGURT
- MECHANISTIC RATIONALE FOR..
- YOGURT AND DISEASES OF...
- SAFETY
- CONCLUDING REMARKS AND...
- REFERENCES

Lactobacillus GG (LGG), the strain of friendly probiotic bacteria mentioned on page 99 of this report, is considered the "gold standard" of probiotics and has been the subject of 250 human clinical trials, so that there is plenty of evidence of what it does.

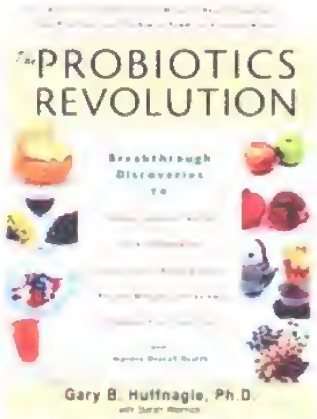
Probiotic Benefits



Probiotics foods (such as yogurt) have been observed to be generally better accepted by lactose intolerant people than non-fermented milk products. This is partly due to a process called hydrolysis, by which the chemical compounds present in the milk break down into simpler compounds during the fermentation of the milk. This results in a lower lactose content in yogurt when compared to milk. However, the live and active cultures present in yogurt (and which milk does not have) also have a beneficial effect on the digestion of lactose in lactose intolerant people. Yogurt can also prevent childhood obesity because it is rich in calcium, and research has shown that calcium can aid in weight gain reduction. This is because the calcium levels of fat cells can change signals within the cell that control the making and burning of fat. In this way yogurt changes the amount of fat that is stored in our cells. Several books have been written by doctors and other health experts on the diverse health benefits of probiotics.

The Probiotics Revolution - A Great Read for Parents

For the average consumer the probiotic marketplace can be tough to negotiate. What's real, what works and how do probiotics do what they do. If you're looking for a remarkably well-written primer on probiotics be sure to check out *The Probiotics Revolution - The Definitive Guide to Safe, Natural Health Solutions Using Probiotic and Prebiotic Foods and Supplements (Bantam 2008)* by Dr. Gary Huffnagle and Sarah Wernick.



Another probiotic bacteria called acidophilus promotes iron absorption in the body's cells, thus helping to prevent anemia.

Acidophilus

Probiotics and Young Children

Research Proves Reduced Upper Respiratory Symptoms

Like

Mar 3, 2010 Arlene Lengyel

http://www.suite101.com/content/probiotics-and-young-children-a208736

If sick, it pays to follow doctor's orders, but a prescribed antibiotic can wipe out beneficial bacteria in the gut

Yogurt - Mr T in DC

Do not think that all bacteria are disease-producing. Friendly bacteria live in the digestive tract and help our bodies run smoothly by enhancing the immune system, fighting off bad bacteria, and promoting good digestion. Probiotics are products that contain live friendly bacteria, similar to natural bacteria found in our bodies. Probiotics are most popular in supplements and food – with an explosion of new items on the market.

The two most common probiotic groups (genera) are *Lactobacillus* and *Bifidobacterium*. Each group has many species, such as *Lactobacillus acidophilus*, and there are numerous strains. Probiotics are safe for adults and children, as they already naturally reside in our bodies.

Probiotics Reduces Kids' Cold Symptoms

Published in the online journal *Pediatrics*, July 27, 2009, a study found that cold and flu symptoms decreased in young children, ages three to five, who took either a single probiotic or a combination of probiotics. Furthermore, the single or multiple probiotic use reduced the amount of time on antibiotics (compared to a placebo group) by 68 percent and 84 percent respectively, and missed daycare days declined. The study involved 326 healthy kids, dosed twice a day for six months.

Effect of long term consumption of probiotic milk on infections in ...

by K Hatakka - 2001 - Cited by 330 - Related articles

Conclusions: **Lactobacillus** GG may **reduce respiratory infections** and their severity among **children** in day care. The effects of the probiotic **Lactobacillus** GG ...

www.bmj.com › Research

In children (especially those like our sons, who have poor nutrition, and are all day in a daycare), probiotics can help prevent respiratory infections and colds.

Link of article below right: http://pediatrics.aappublications.org/cgi/content/full/104/5/e64

The excerpt from the article above states that the children in that particular study were given probiotics twice a day. Our sons ate yogurt twice a day and never suffered from respiratory infections. In fact, unlike our main accuser's children, who were almost continuously sick throughout their first few years, our kids simply did not get sick.

PEDIATRICS

OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

PEDIATRICS Vol. 104 No. 5 November 1999, p. e64

ELECTRONIC ARTICLE:

Prophylactic *Lactobacillus* GG Reduces Antibiotic-Associated Diarrhea in Children With Respiratory Infections: A Randomized Study

Tarja Arvola, MD[1] Kirsi Laiho, MSc[1] Sari Torkkeli, MD[2] Hannu Mykkänen, PhD[3] Seppo Salminen, PhD[3] Leena Maunula, MSc[4] and Erika Isolauri, MD[4]

From the [1] Medical School, University of Tampere and the Department of Pediatrics, Tampere University Hospital, Tampere, Finland; [2] Department of Physiology and Clinical Nutrition, University of Kuopio, Kuopio, Finland; the [3] Health Care Center, Tampere, Finland; the [4] Department of Biochemistry and Food Chemistry, University of Turku, Turku, Finland; the [5] Department of Virology, University of Helsinki, Helsinki, Finland; and the [6] Department of Pediatrics, University of Turku, Turku, Finland.

We mentioned previously (on page 106 of this report) how certain ethnic groups who frequently consume probiotic foods are known for their longevity. The Abkhazians are one such group of people. They live in a region called Abkhazia which considers itself an independent state. It is located on the eastern coast of the Black Sea (highlighted green on the map above right). The Abkhazians live in the Caucasus mountains to the southeast of Russia.

In this region yogurt and kefir (a yogurt -like beverage which we also used to give to our boys) are consumed regularly, and has contributed to the Abkhazians' amazing longevity which one can read about at the link below:

http://www.enotalone.com/article/11482.html

In many parts of the Caucasus Mountains, the natives (many who are still active and live past 100 years of age) drink kefir. The kefir grain with its fermenting yeasts and bacteria is added to fresh milk which is then permitted to sour.
What are the unique properties of kefir? Many Naturopathic doctors consider kefir to be the best remedy for digestive troubles because it has a very low curd tension. This means that the curd breaks up very easily into extremely small particles. The curd of yogurt, on the other hand, holds together or breaks up into lumps. The small size of the kefir curd facilitates digestion by presenting a large surface for the digestive agents to work on.
Kefir, because it is such an easily digested nutritious food is ideal for infants, pregnant women, nursing mothers, convalescents, the elderly, people who suffer from constipation or those who have other abnormal digestive activity.

Health Benefits of Probiotics

- Studies have found that probiotics may improve nutrient bioavailability, for B vitamins, calcium, iron, zinc, copper, magnesium and phosphorus, among others.
- Pediatric studies have found that certain strains (such as Lactobacillus GG, found in Culturelle capsules) may aid in significantly decreasing the rate of acute diarrhea and rotavirus shedding. Parents also reported a 25% decrease in diaper rash among babies drinking formula containing probiotics.
- Probiotics and active bacteria culture may improve lactose intolerance. The bacterial strain commonly used in yogurt can produce lactase enzymes. Therefore, people with lactose intolerance and children suffering from intestinal infection can usually tolerate yogurt with an active culture.
- Some studies have shown that by regulating intestinal transit time, probiotics improve constipation among the elderly.
- Other studies have shown that probiotics, especially acidophilus, promote the growth of healthy bacteria in the colon and reduce the conversion of bile into carcinogens (cancer-causing substances).
- Some studies have found that probiotics may enhance immunity by regulating lymphocytes and antibodies.

For many years scientists have been intrigued by several communities around the world that are famed for their longevity. However, among these communities there are few that can rival the Abkhazians when it comes to abundance of years.

"Certainly no area in the world," Leaf wrote, "has the reputation for long-lived people to match that of the Caucasus in southern Russia." And in all the Caucasus, the area most renowned for its extraordinary number of healthy centenarians (people above the age of 100) was Abkhasia (pronounced "ab-KAY-zha"). A 1970 census had established Abkhasia, then an autonomous region within Soviet Georgia, as the longevity capital of the world. "We were eager to see the centenarians," Leaf said, "and Abkhasia seemed to be the place to do so."

The Abkhazians have a wholesome diet in which probiotics figure prominently . They drink kefir as a daily staple, thus ensuring an abundant intake of probiotic bacteria. Kefir originated in ancient times with the shepherds of the Caucasus region. The name kefir is thought to have originated from the Turkish word

Find out more about kefir's history at: http://en.wikipedia.org/wiki/Kefir

"keyif" meaning "joy/pleasure". Kefir is not only the name of the fermented beverage, it is also the name of the grains which are added to the milk in order to ferment it. Kefir grains are really a combination of bacteria and yeasts mixed together with proteins, lipids, and sugars.

Kefir & Sprouts

When all these ingredients are mixed together the kefir grains resemble cauliflower. They are then added to cow, goat, or sheep's milk and traditionally allowed to ferment in skin bags. It is a popular breakfast, lunch, and dinner drink in Eastern Europe. The antiquity of this probiotic beverage is attested to by the fact that Marco Polo (1254-1324) , the famous Venetian merchant and explorer from the 1200's makes a mention of kefir in his travel recollections.

It is important to realize the profound difference that exists in the Abkhazian diet in comparison with that of Western nations such as United States and Great Britain. They have a more sedate lifestyle coupled with a diet that is free from partially hydrogenated oils, genetically modified foods, artificial sweeteners, and highly processed foods in general.

AN INTERESTING GEO FACT:

It was quite interesting (though not surprising) to find out that there is African descent among the Abkhazians. This is not surprising because Africans have lived in Europe since Ancient Roman Times, and most Southern European countries have some African descent.

http://en.wikipedia.org/wiki/Afro-Abkhazians

In the mountainous region around Turkey the Abkhazian populace is famous for their extended life expectancy. They have a secret weapon though – they indulge in quite a bit of fermented kefir on a daily basis, a staple that is comparable to yogurt. Kefir includes a bacterium known as L. acidophilus that is also found in live yogurt culture. L. acidophilus flourishes in the digestive tract and assists in the digestion of our food quite ably while combating unhealthy germs. When significant numbers of L. acidophilus bacterium take up in the digestive system, they aid in maintaining healthy bowel cells making them better able to remove additional nutrients from our ingested food. As we increase in age, this process becomes extremely important.

The probiotic rich diet of the Abkhazians is now starting to be discovered by the Western world. Kefir is fast becoming popular in the United States where lactose intolerance is common. Kefir helps lactose intolerant people by breaking down lactose in the stomachs of people who are deficient in the natural enzyme called lactase. Kefir can break

Serovar - refers to distinct variations within a subspecies of bacteria or viruses.

down the lactose because of its variety of probiotic bacteria. Apart from its easy digestability, several studies have already been made that confirm the great health benefits of probiotic kefir. Below are the screenshots from one such study(whose link is also provided). It seems that the Lactobacillus in kefir protects against a strain of Salmonella enterica bacteria known as Salmonella Enteriditis. Note that the term "serovar" (as explained above) refers to the name of a specific variation of a given bacterial strain. Available at link below;

Available online at www.sciencedirect.com
ScienceDirect
International Journal of Food Microbiology 119 (2007) 264–271
International Journal of Food Microbiology
www.elsevier.com/locate/ijfoodmicro

Protective action of *Lactobacillus kefir* carrying S-layer protein against *Salmonella enterica* serovar Enteritidis

M.A. Golowczyc [a], P. Mobili [a], G.L. Garrote [a], A.G. Abraham [a], G.L. De Antoni [a,b,*]

[a] Centro de Investigación y Desarrollo en Criotecnología de Alimentos (CIDCA), Argentina
[b] Cátedra de Microbiología, Facultad de Ciencias Exactas, UNLP, Calle 47 y 116, 1900-La Plata, Argentina

Received 16 July 2007; accepted 23 July 2007

http://www.biol.unlp.edu.ar/alimentosvsalud/accionkefircontrasalmonella.pdf

Eight *Lactobacillus kefir* strains isolated from different kefir grains were tested for their ability to antagonize *Salmonella enterica* serovar Enteritidis (*Salmonella enteritidis*) interaction with epithelial cells. *L. kefir* surface properties such as autoaggregation and coaggregation with *Salmonella* and adhesion to Caco-2/TC-7 cells were evaluated. *L. kefir* strains showed significantly different adhesion capacities, six strains were able to autoaggregate and four strains coaggregated with *Salmonella*.

Coincubation of *Salmonella* with coaggregating *L. kefir* strains significantly decreased its capacity to adhere to and to invade Caco-2/TC-7 cells. This was not observed with non coaggregating *L. kefir* strains.

Spent culture supernatants of *L. kefir* contain significant amounts of S-layer proteins. *Salmonella* pretreated with spent culture supernatants (pH 4.5–4.7) from all tested *L. kefir* strains showed a significant decrease in association and invasion to Caco-2/TC-7 cells. Artificially acidified MRS containing lactic acid to a final concentration and pH equivalent to lactobacilli spent culture supernatants did not show any protective action. Pretreatment of this pathogen with spent culture supernatants reduced microvilli disorganization produced by *Salmonella*. In addition, *Salmonella*

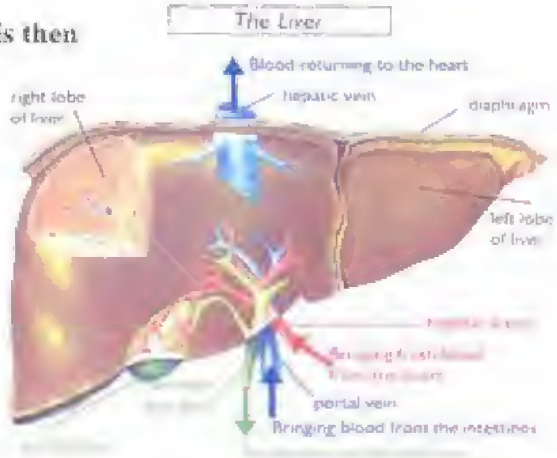
Notice in article screenshot above, that artificially created lactobacillus did not have any protective ability when it came to hindering the effect of Salmonella Enteritidis. Its only the natural kefir or yogurt strains that protect.

Which means that the specific variation of the salmonella enterica strain in discussion is that of serovar enteriditis. All Salmonella enterica variations are involved in causing diseases of the intestines. The sad fact is that Salmonella enterica serovar Enteritidis is a major cause of food-borne diseases in industrialized countries, and its occurrence has

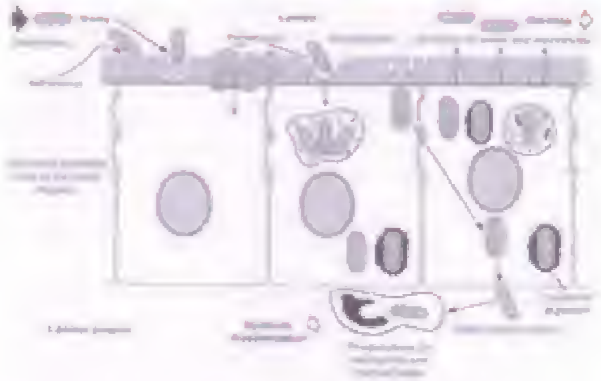
increased substantially in recent decades, which indicates that the cause is most likely due to the further propagation of corporate farming, something which the typical Abkhazian Caucasus mountain woman has not had to deal with when she prepares her meals.

Approximately 80% of all human gastrointestinal diseases can be traced to contaminated egg products. When hens are infected, the bacteria in their reproductive tissues contaminate the eggs. The bacteria then persists in the egg albumen (or egg white). Once a human ingests it, it passes through the stomach to the intestine, where after binding itself to the wall of the intestine, it takes over the liver.

In the liver the Salmonella continues to grow and is then released back into the intestine where many of the bacteria will be expelled through diarrhea. Salmonella is always due to poor sanitation, which is why the most likely culprit of the



nearly meteoric rise of Salmonella incidents is modern corporate factory farming. Lack of hygiene is a fact on these mega farms where filth and animal cruelty is rampant. It is nearly impossible to tend adequately to the needs of tens of thousands of chickens.



SALMONELLA

VS.

NON-SALMONELLA

In industrialized countries such as the United States, where food borne diseases are growing increasingly more common, probiotics such as kefir (and yogurt) could serve to protect many children from unnecessary suffering.

Specific probiotic strains that inhibit salmonella:

There is a strain of the probiotic Lactobacillus acidophilus called the NCFM strain because it was isolated at the North Carolina Food Microbiology lab back in the 1970s. Also called LA-1. It's common for strains to have more than one designation.

It is one of the most effective "Acidophilus" strains on the market. In particular, it has demonstrated in vitro antagonistic activity against Salmonella typhimurium, enteropathogenic E. Coli, Staphylococcus aureus, and Clostridium perfringens (Rat Gilliland, S.E., and M.L. Speck. 1977a. Antagonistic action of Lactobacillus acidophilus toward intestinal and foodborne pathogens in associative cultures. J. Food Protection. 40: 820-823)

Another study conducted by the Agricultural Development and Advisory Service (A.D.A.S.) in the UK [by N.M Parkinson of the ADAS Central Science Laboratory in Slough, UK, 1989: In-vitro evaluation of the antagonism of lactic acid bacteria and the probiotic Provita WD against pathogenic bacteria] discovered that the NCFM (LA-1) strain of L. acidophilus dramatically reduced the growth of Salmonella typhimurium, Salmonella enteritidis and Salmonella dublin in associative broth cultures. All three of these Salmonella species have a history of causing food poisoning.

Considering the harmless nature of the NCFM (LA-1) strain of L. acidophilus and its status as G.R.A.S. on the FDA list of food microorganisms, it would seem that its dispensation and consumption during a salmonella outbreak (or as a preventative under normal circumstances) would be something to consider.

Health Benefits

Our food ranking system qualified yogurt as a very good source of calcium, phosphorus, riboflavin-vitamin B2 and iodine. Yogurt also emerged from our analysis as a good source of vitamin B12, pantothenic acid-vitamin B5, zinc, potassium, protein and molybdenum. These 10 nutrients alone would make yogurt a health-supportive food. But some of the most interesting health information about yogurt comes from a different context-its potential inclusion of live bacteria.

Study Claims That Yogurt Reduces Children's Tooth Decay

June 10th, 2010, By Dental Health Magazine Staff

A new study claims that children who eat yogurt regularly have a reduced risk of tooth decay development.

Japanese researchers have recently suggested that 3 year old children who eat yogurt 4 times each week reduced their chances of the development of a cavity by as much as 22% as compared to children of the same age who had eaten yogurt less than once a week.

3. Yogurt is loaded with vitamins.

One serving is a significant source of potassium, phosphorous, riboflavin, iodine, zinc, and vitamin B5 (pantothenic acid). Yogurt also contains B12, which maintains red blood cells and helps keep your nervous system functioning properly. "Vitamin B12 is found mostly in animal products, such as chicken and fish, so strict vegetarians can easily fall short," says Jackie Newgent, RD, a FITNESS advisory board member and author of *Big*

6. Yogurt may prevent high blood pressure.

Every day 70 percent of us consume more than twice the recommended amount of salt; over time that can lead to hypertension and kidney and heart disease. The potassium in yogurt, almost 600 milligrams per eight ounces, may help flush some of the excess sodium out of your body. In fact, adults in a study in the *American Journal of Clinical Nutrition* who ate the most low-fat dairy -- two or more servings daily -- were 54 percent less likely to develop high blood pressure than those who ate the least.

We have already discussed in this section the numerous reasons why our sons consumed probiotic foods in abundance, and why we (as their parents) now demand that they continue to enjoy a probiotic-rich diet.

Important Fact:

Honey increases Lactobacillus in the gut. However, though most pediatricians recommend waiting until 12 months before giving a child honey, it is preferable to wait until the child is 1 ½ to 2 years old, and to use organic honey.

A Japanese study has shown that children who consume yogurt four times a week had 22% less chances of developing cavities. As stated before, our sons ate

yogurt twice a day and drank kefir frequently. They also were not given refined sugar products. So we do not understand how it has been said in the past that both of our boys had cavities at the time that they were illegally taken from us.

Though we have not noticed anything wrong with our sons teeth on our visits, we think that daily consumption of yogurt might prevent cavities in the future, in addition to all the other numerous health benefits that can be derived from this food.

The kefir which we used to buy for our sons is the Lifeway Probugs Organic Kefir For Kids. We used to purchase The Orange Creamy Crawler flavor, but as there are three flavors available , we only ask that the flavor which they most prefer be bought.

The package contains four pouches and sells for $4.99. As long as our sons eat yogurt twice a day, they can drink the kefir every two days which means that the package would last both of them about half a week.

This brand has an impressive 7 to 10 billion CFU's (see page 95) of 10 live active cultures.

The yogurt which we used to give our sons twice a day was the Stonyfield Yo Baby Organic Yogurt, which is not only for infants but for toddlers and very small children as well. When we would purchase our sons' yogurt we never had the option of Yo Toddler as the supermarket did not sell it. If it is now sold in Whole Foods (we have not seen it) we have no objection to Stonyfield YoToddler Organic Yogurt being bought for our sons, as long as they are purchased in two varieties: 1) with DHA and 2) with Iron.

strawberry banana - YoToddler - organic yogurt

Serving Size 1 container	
Amount Per Serving 113g	
Calories 120	
	% Daily Value*
Total Fat 4	
Sodium 55mg	
Dietary Fiber <1g	
Sugars 14g	
Protein 4g	23%%
Vitamin A 6%	Vitamin C 0%
Calcium 15%	Iron 0%
Vitamin D 20%	Zinc 20%

*Percent Daily Values are based on a 2,000 calorie diet.

OUR FAMILY RECIPE:

CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC STRAWBERRY PURÉE, ORGANIC BANANA PURÉE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, FISH OIL (ANCHOVY OIL, SARDINE OIL, TILAPIA FISH GELATIN: A NATURAL SOURCE OF DHA), ORGANIC RICE FLOUR, ORGANIC OAT BRAN, NATURAL FLAVOR, PECTIN, ORGANIC BEET JUICE CONCENTRATE (FOR COLOR), ZINC GLUCONATE, VITAMIN D3. Contains our exclusive blend of six live active cultures: S. thermophilus, L. bulgaricus, L. acidophilus, Bifidus, L. casei, and L. rhamnosus.

The screenshots to the left show the nutritional data of Stonyfield Yo Toddler Organic Strawberry-Banana Yogurt With DHA.

If the variety of Stonyfield YoToddler Organic Apple Yogurt With Iron & DHA (below) is available, then it is no longer necessary to buy two different varieties since this variety includes both DHA & Iron. Above the nutrition info is shown.

OUR FAMILY RECIPE:

CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC APPLE PURÉE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, FISH OIL (ANCHOVY OIL, SARDINE OIL, TILAPIA FISH GELATIN: A NATURAL SOURCE OF DHA), ORGANIC RICE FLOUR, ORGANIC OAT BRAN, ORGANIC SPICES (CINNAMON AND NUTMEG), PECTIN, NATURAL FLAVOR, FERROUS GLUCONATE (IRON), ZINC GLUCONATE, VITAMIN D3. Contains our exclusive blend of six live active cultures: S. thermophilus, L. bulgaricus, L. acidophilus, Bifidus, L. casei, and L. rhamnosus.

apple - YoToddler - organic yogurt

Serving Size 1 Container	
Amount Per Serving 113g	
Calories 110	
	% Daily Value*
Total Fat 4g	
Trans Fat 0g	
Sodium 55mg	
Total Carbohydrate 15g	
Sugars 14g	
Protein 4g	23%
Vitamin A 6%	Vitamin C 0%
Calcium 15%	Iron 45%
Vitamin D 20%	Zinc 20%

*Percent Daily Values are based on a 2,000 calorie diet.

We do not wish for Stonyfield Yo Kids Organic Yogurt to be bought for our boys. The YoKids variety (though organic and with live active cultures) does not contain any iron or DHA. Stonyfield Yo Baby and YoToddler Organic Yogurts both have at least 1gram of fiber while Yo Kids has 0 grams. So we prefer the YoBaby & YoToddler varieties because they are nutritionally superior to YoKids.

RASPBERRY PEAR
CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC RASPBERRY PURÉE, ORGANIC PEAR PURÉE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, ORGANIC RICE FLOUR, FISH OIL (ANCHOVY OIL, SARDINE OIL, TILAPIA FISH GELATIN; A NATURAL SOURCE OF DHA), ORGANIC OAT BRAN, PECTIN, NATURAL FLAVOR, ORGANIC CARROT AND ORGANIC BLACK CURRANT JUICE CONCENTRATES (FOR COLOR), ZINC GLUCONATE, VITAMIN D3. CONTAINS OUR EXCLUSIVE BLEND OF SIX LIVE ACTIVE CULTURES: *S. THERMOPHILUS, L. BULGARICUS, L. ACIDOPHILUS, BIFIDUS, L. CASEI,* AND *L. RHAMNOSUS.*

STRAWBERRY BANANA
CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC STRAWBERRY PURÉE, ORGANIC BANANA PURÉE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, ORGANIC RICE FLOUR, ORGANIC OAT BRAN, FISH OIL (ANCHOVY OIL, SARDINE OIL, TILAPIA FISH GELATIN; A NATURAL SOURCE OF DHA), NATURAL FLAVOR, PECTIN, ORGANIC BEET JUICE CONCENTRATE (FOR COLOR), ZINC GLUCONATE, VITAMIN D3. CONTAINS OUR EXCLUSIVE BLEND OF SIX LIVE ACTIVE CULTURES: *S. THERMOPHILUS, L. BULGARICUS, L. ACIDOPHILUS, BIFIDUS, L. CASEI,* AND *L. RHAMNOSUS.*

This 1.5 pound package comes in six 4 oz. cups and costs $3.69. Each cup contains 20 mg of DHA.

strawberry banana & raspberry pear - YoBaby organic - whole milk yogurt

Serving Size 1 container	
Amount Per Serving 113g	
Calories 110	
	% Daily Value*
Total Fat 4g	
Trans Fat 0g	
Sodium 55mg	
Total Carbohydrate 15g	
Dietary Fiber less than 1g	
Sugars 13g	
Protein 4g	28%
Vitamin A 10%	Vitamin C 0%
Calcium 20%	Iron 0%
Vitamin D 20%	Zinc 20%

*Percent Daily Values are based on a 2,000 calorie diet.

We used to purchase YoBaby Strawberry-Banana & Raspberry- Pear Organic Yogurt With DHA. We would give our sons this yogurt in the evening and another variety with iron in the morning.

The YoBaby and YoToddler Organic Yogurt varieties both have organic flaxseed concentrate. We will be discussing the merits of flaxseed later on.

apple & mixed berry - YoBaby organic - whole milk yogurt

Serving Size 1 container	
Amount Per Serving 113g	
Calories 110	
	% Daily Value*
Total Fat 3.5g	
Trans Fat 0g	
Sodium 55mg	
Total Carbohydrate 15g	
Dietary Fiber less than 1g	
Sugars 13g	
Protein 4g	28%
Vitamin A 10%	Vitamin C 0%
Calcium 20%	Iron 30%
Vitamin D 20%	Zinc 20%

*Percent Daily Values are based on a 2,000 calorie diet.

OUR FAMILY RECIPE:

APPLE
CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC APPLE PURÉE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, ORGANIC RICE FLOUR, ORGANIC OAT BRAN, ORGANIC SPICES (CINNAMON AND NUTMEG), PECTIN, FERROUS GLUCONATE (IRON), NATURAL FLAVOR, ZINC GLUCONATE, VITAMIN D3. CONTAINS OUR EXCLUSIVE BLEND OF SIX LIVE ACTIVE CULTURES: *S. THERMOPHILUS, L. BULGARICUS, L. ACIDOPHILUS, BIFIDUS, L. CASEI,* AND *L. RHAMNOSUS.*

MIXED BERRY
CULTURED PASTEURIZED ORGANIC WHOLE MILK, NATURALLY MILLED ORGANIC SUGAR, ORGANIC STRAWBERRY PURÉE, ORGANIC RASPBERRY PURÉE, ORGANIC BLUEBERRY JUICE FROM CONCENTRATE, ORGANIC OAT FLOUR, ORGANIC FLAXSEED CONCENTRATE, ORGANIC RICE FLOUR, ORGANIC OAT BRAN, ORGANIC CARROT AND ORGANIC BLACK CURRANT JUICE CONCENTRATES (FOR COLOR), NATURAL FLAVOR, PECTIN, FERROUS GLUCONATE (IRON), ZINC GLUCONATE, VITAMIN D3. CONTAINS OUR EXCLUSIVE BLEND OF SIX LIVE ACTIVE CULTURES: *S. THERMOPHILUS, L. BULGARICUS, L. ACIDOPHILUS, BIFIDUS, L. CASEI,* AND *L. RHAMNOSUS.*

We also would buy this variety (shown left) with iron. This one was usually given to them in the morning. It is the Stonyfield YoBaby Organic Apple & Mixed Berry Yogurt with added Iron. Each 4oz. cup provides 30% of the iron needed daily. The ingredients are shown to the left, and as can be seen are of high quality. This package of six 4 oz. cups costs $3.79. It can be given to our boys once a day.

All of us are of course aware of how important DHA consumption is, as it is vital for healthy development of the child's brain, and how it helps to prevent several diseases (see page 84 of this report).

Infants 1 to 18 months
32 mg of EPA+DHA/lb of weight

Children 1.5 to 15 years
15 mg of EPA+DHA/lb of weight

Older Teens 15 to 20 years
500 mg EPA+DHA with a min of 220 mg of each

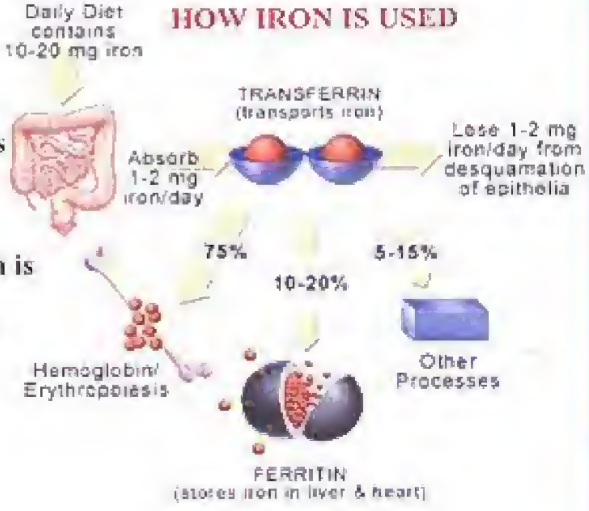
To the above right is shown a chart which specifies how much DHA is necessary according to the child's age. Since our sons are ages five and three they would require 15 mg of DHA per pound of weight. We do not know how much they weigh now (though we have noticed for some time that they are much slimmer, now that they are in our main accuser's "care").

Recommended Dietary Allowance (RDA) for iron by age and sex

Age/Group	Life Stage	Iron (mg/day)
Infants	0–6 months	0.27*
	7–12 months	11
Children	1–3 years	7
	4–8 years	10
Males	9–13 years	8
	14–18 years	11

Iron is an equally important nutrient for the developing child. To the left we show a graph that specifies how much iron is needed by a child according to their age group. Galileo needs at least 7mg a day of iron and Wencito needs at least 10 mg, so the iron-containing yogurt once a day (30% RDA, see pg 120) and the Amazing Grass Kidz SuperFood supplement once a day (11% RDA, see pg. 78), as well as the Toddler Formula (1.8 mg per 5 oz. which would be 10% RDA, see http://www.naturesone.com/pdf/N1-MultiProductComparison.pdf#view=FitH,0), would give them 51% of the iron that they need each day. The rest can be obtained from healthy kosher organic foods that we will be recommending in this report. If our boys are given one egg every two days that would add an additional 4% RDA (see pg 86) of iron to their diet.

Iron is a very important mineral and is a part of all cells. Almost two-thirds of the iron in the body is found in hemoglobin, which is a protein in red blood cells that carries oxygen to the tissues (see pg 35).



Terms To Know:

Transferrin: This is a type of blood plasma protein that delivers iron throughout the body.

Blood Plasma: This is a yellow liquid component of blood, in which the blood cells in whole blood are normally suspended.

Desquamation: This term is used to describe the shedding of the outer layers of the skin.

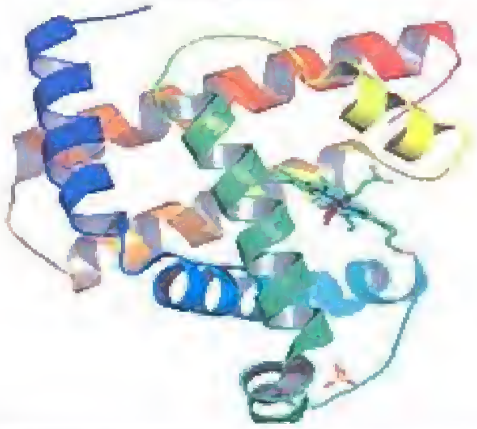
Epithelia: This is the plural form of Epithelium, which is a tissue consisting of one or more layers of closely packed cells that cover the external and internal surfaces of the body (see page 102).

Hemoglobin: An iron-containing, oxygen transporting, metallo protein. (For more see page 35 of this report).

Erythropoiesis: The process by which red blood cells (erythrocytes) are made.

Ferritin: This is a protein that is found inside cells, it stores iron so your body can use it later. The level of ferritin in the blood (serum ferritin level) shows how much iron is stored in the body. For this reason a ferritin test can be used to detect iron deficiency.

Myoglobin



Iron is a part of many enzymes. Enzymes in turn help the body to digest foods, and also help with many other important reactions that occur within the body.

While the majority of iron is found in hemoglobin, it is also present in myoglobin , which is a single chain protein found in muscle fibers. Myoglobin is a polypeptide chain (containing multiple peptide chains) made up of 153 amino acid residues. This protein helps supply oxygen to the muscle by binding the oxygen to an iron atom, thus allowing the oxygen to be stored in the muscle, which the body can then use during strenuous exercise. Iron is also found in proteins (such as ferritin, see page 121) that store iron for future needs. Around 10 to 20% of the body's iron is stored for later use. Though very little iron is excreted from the body, and it is possible for iron to accumulate in tissues and organs when normal areas of storage are full, the body (when healthy) has ways of preventing iron toxicity. The body loses some iron (1 to 2 mg a day) by sweating, and from the shedding of skin cells and cells of the mucosal lining of the gastrointestinal tract (see graph on iron related body processes on page 121), also iron stores are regulated by intestinal iron absorption. Most of the iron in the body is stored and recycled by the

USEFUL TERMS TO KNOW

Peptide: This term comes from the Greek "peptein" meaning to digest. It is a molecular chain compound that is made up of two or more amino acids that are joined by peptide bonds.

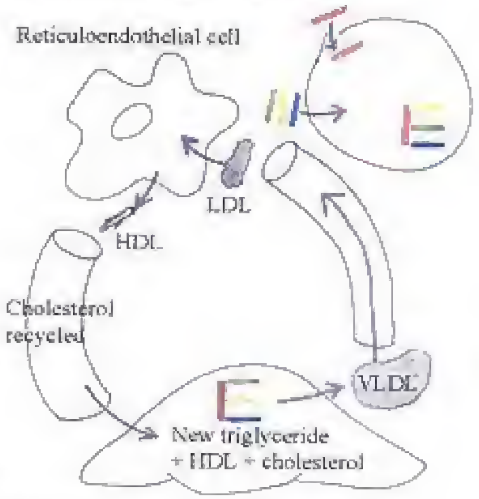
Peptide Bonds: Term used to describe the chemical bond that is formed between the carboxyl groups and the amino groups of amino acids. It is the primary way of linkage of all protein structures.

Carboxyl Groups: A functional group that consists of a carbon atom joined to an oxygen atom by a double bond, and to a hydroxyl group by a single bond.

Hydroxyl Group: A functional group that is made up of an oxygen atom joined by a single bond to a hydrogen atom.

Functional Group: A group of atoms within the molecule that is responsible for certain properties of that molecule and for the reactions in which it takes part.

reticuloendothelial system which also breaks down aged red blood cells. The reticuloendothelial system is considered a part of the immune system, and is a network of cells and tissues found throughout the body. Some of the reticuloendothelial cells found in the blood are unusually large, such as the ones that have to do with blood cell formation or destruction, the storage of fatty materials, and the metabolism of iron and pigments (any coloring matter of the body). Regulating iron levels, however, is not only the job of individual cells but of the whole body. Most of the iron in the body is located on hemoglobin molecules of red blood cells, so hemoglobin recycling provides most of the iron for blood cell production. Hemoglobin recycling operates like this: red blood cells after reaching a certain age are destroyed, but the iron in them is kept and put on transferrin molecules (look at page 121) which then bring the iron back into the blood. The human body strictly regulates iron absorption and recycling, and it can substantially reduce the amount of iron that it absorbs across the mucosa (see pages 102 to 103). However, it does not have the ability to entirely shut down the iron transport process when excess iron levels are present (unlike the body's bio-mechanism for producing Vitamin D which can shut down completely in order to prevent excess levels of Vitamin D- look at screenshot below).



Because the body stops producing vitamin D on its own when levels get high enough, it is impossible to get vitamin D poisoning from sunlight. The body produces enough vitamin D in only a fraction of the time it takes to burn.

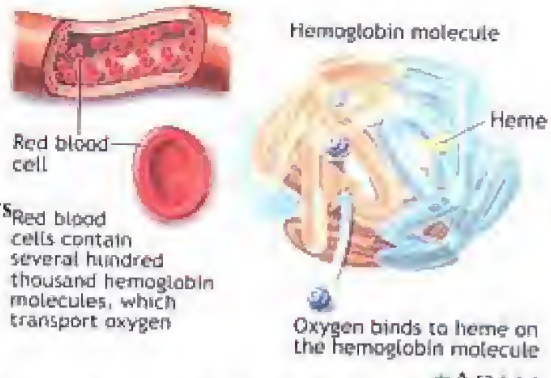
Though the body does its part to regulate iron levels, one must also help by being aware of how much iron is really needed on a daily basis in order to completely avoid iron overload.

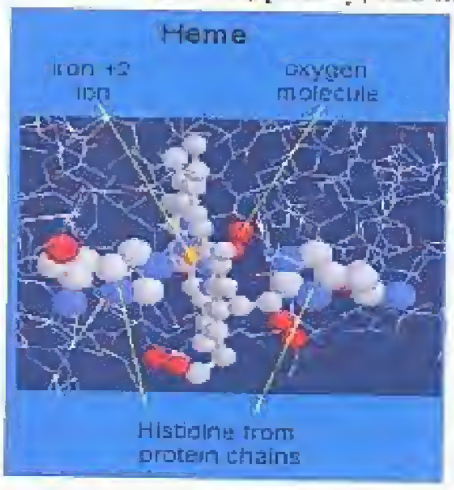
Most cases of iron poisoning in children are due to the accidental ingestion of prescription adult iron supplements by small children. Iron toxicity in children has occurred when they have ingested 200 mg of iron (most cases are due to swallowing iron supplements that have not been sealed properly and placed out of reach). This of course would be an enormous amount, since children only need around 10 to 12 mg a day (depending on age). Even 15 mg a day would not be toxic as the body loses some iron (1 to 2 mg a day) from the shedding of the skin (see graph on iron related body processes on page 121), and sometimes not all the iron ingested is necessarily absorbed by the body.

In children, death has occurred from ingesting 200 mg of iron [7]. It is important to keep iron supplements tightly capped and away from children's reach. *Any time* excessive iron intake is suspected, immediately call your physician or Poison Control Center, or visit your local emergency room. Doses of iron prescribed for iron deficiency anemia in adults are associated

The foods which we will recommend will provide our sons with an intake of iron which is abundant but not toxic.

There are two types of dietary iron : 1) heme , and 2) non-heme iron. Heme iron is derived from hemoglobin, the protein in red blood cells that delivers oxygen to cells, and so is found in animal foods (such as meat, poultry, and fish).





Non-heme iron comes from plant sources, and although heme- iron is absorbed two to three times more efficiently than iron from plants, the consumption of Vitamin C foods alongside non-heme iron- rich foods can enhance non-heme iron absorption, especially when eaten at the same meal (look at screen shot below). Non-heme iron is also added to iron fortified foods such as the organic yogurt that we are requesting for our sons (see pg 120).

But foods rich in Vitamin C (papaya, orange, cantaloupe, broccoli, brussel sprouts, raw green peppers, grapefruit, strawberries, etc.) can be as effective as meat meals in improving iron absorption. Remember though sunlight and heat destroy that Vitamin C.

We prefer most of our sons' iron to be from non-heme iron (as we are not big meat eaters). Eggs though, can be a good non-meat source of heme-iron (see pages 83-88 and screenshot below).

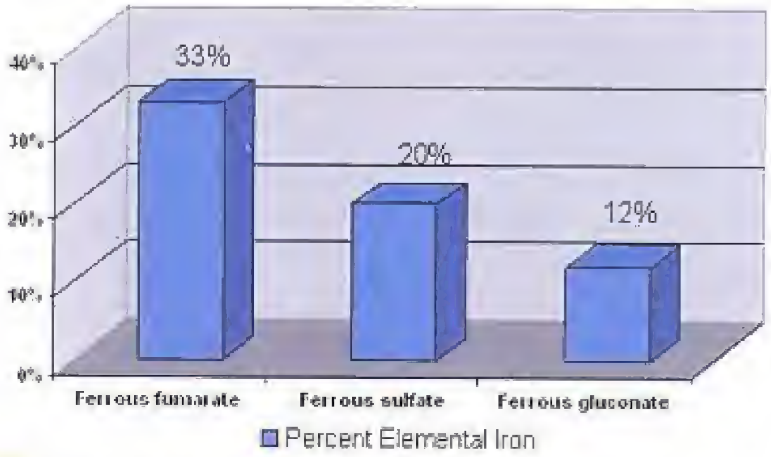
The best source of iron is lean red meat. Iron can also be found in chicken, turkey, eggs, and cereals.

Heme iron, which makes up 40 percent of the iron in meat, poultry (incl eggs, in particular the yolks), and fish is well absorbed.

Non-heme iron, 60 percent of the iron in animal tissue and all the iron in plants (fruits, vegetables, grains, nuts) is less well absorbed *The Vegan Resource Group*

Supplemental iron is available in two forms: 1) ferrous, and 2) ferric, but iron is most absorbable in the ferrous form rather than in the ferric. The makers of YoBaby Organic Yogurt wisely chose to use the ferrous form of iron in the ferrous gluconate type of this mineral (see page 120). Ferrous gluconate is made from iron and gluconic acid (so it's a combination of iron and glucose).

Supplemental iron is available in two forms: ferrous and ferric. Ferrous iron salts (ferrous fumarate, ferrous sulfate, and ferrous gluconate) are the best absorbed forms of iron supplements [64]. Elemental iron is the amount of iron in a supplement that is available for absorption. Figure 1 lists the percent elemental iron in these supplements.



Ferrous gluconate has the same action as ferrous sulphate, but is less irritant and is often acceptable when ferrous sulphate is not tolerated. Weight for weight it contains less iron than the sulphate, so that larger doses are required (300 mg is equivalent to 35 mg of iron).

Ferrous gluconate is present in a number of proprietary iron preparations, many of which contain vitamins. Such vitamin supplements, with the exception of vitamin C, do not increase the absorption of iron and are of little therapeutic value.

In comparison with other types of ferrous iron ferrous gluconate does not contain as much elemental iron (iron in the absolutely pure form). It has only 12% (look at bar graph above) elemental iron. Nevertheless, being a type of ferrous iron it is more absorbable than the ferric form, and ferrous gluconate (as shown on the screenshot above left) is more mild in its composition, being less of an irritant and

tolerated more easily by those with gastrointestinal problems. It is iron in the form of ferrous sulfate (not ferrous gluconate) that has been the number one cause of accidental poisoning among children. Since ferrous gluconate is only 12% elemental iron (see graph on page 125) 300-mg in tablet form would provide 35 mg of elemental iron. The lower percentage of elemental iron coupled with the excellent absorbability of ferrous iron signifies that children can have an iron source with good bioavailability while posing less of a risk for iron overload (see lower left screenshot on page 125). Children may show signs of iron toxicity with ingestions of 10-20 mg of elemental iron (the absolutely pure form). Ferrous gluconate also has natural preservative qualities and is used as a natural preservative in black olives where it serves the purpose of natural color retention agent (though there are many that prefer to purchase olives without this additive).

Iron Needs Missed in Millions

Add new comment Send to friend Print this article

SHARE

Iron deficiency in toddlers, preschool children, and teenage girls is still all too common in the US. *Healthy People 2010* is a program that has set an achievable target of dropping iron deficiency rates to 5 percent, 1 percent and 7 percent respectively in these age groups during the current decade. Where do we stand now? We still have a way to go, with iron deficiency of a degree sufficient to impact intellectual growth in as many as 1 in 14 toddlers and 1 in 6 teenage girls, according to the October 11, 2002 issue of the CDC's *Morbidity and Mortality Weekly Report*. Millions of children and teens are affected! Children who are iron deficient don't learn as well. Memory and school performance are decreased. Athletic performance suffers. These kids may feel tired, weak, and cranky. They may have headaches and a poor appetite, but the brain can be affected even in the absence of other symptoms. Kids with iron deficiency anemia tend to get sick more often. Iron needs can usually be met with a healthy diet. All children should be screened at the appropriate ages to determine if they are getting enough iron.

Alan Greene, MD | AAP

October 18, 2002

Unfortunately, iron deficiency is a common condition in the US, where most parents simply do not understand the need to educate themselves when it comes to nutrition. As soon as most children are one year old they are switched to regular milk (which is totally deficient in iron) instead of being given Toddler Formula. In addition to the regular consumption of conventional milk(which is

laden with harmful residues of synthetic pesticides, antibiotics, and hormones) most children nowadays simply do not have a diet that bears a nutritional quality that is compatible with their intense growth needs.

Causes of Iron Deficiency Anemia:

Following are the most important causes of iron deficiency:

- Body unable to absorb adequate iron (Vitamin C aides in iron absorption)
- Inadequate daily consumption of iron rich food
- growth spurts or blood loss due to heavy period or internal bleeding
- pregnancy
- periods of rapid growth

Table 2: Selected Food Sources of Nonheme Iron [10]

Food	Milligrams per serving	% DV*
Ready-to-eat cereal, 100% iron fortified, ¾ cup	18.0	100
Oatmeal, instant, fortified, prepared with water, 1 cup	10.0	60
Soybeans, mature, boiled, 1 cup	8.8	50
Lentils, boiled, 1 cup	6.6	35
Beans, kidney, mature, boiled, 1 cup	5.2	25
Beans, lima, large, mature, boiled, 1 cup	4.5	25
Beans, navy, mature, boiled, 1 cup	4.5	25
Ready-to-eat cereal, 25% iron fortified, ¾ cup	4.5	25
Beans, black, mature, boiled, 1 cup	3.6	20
Beans, pinto, mature, boiled, 1 cup	3.6	20
Molasses, blackstrap, 1 tablespoon	3.5	20
Tofu, raw, firm, ½ cup	3.4	20
Spinach, boiled, drained, ½ cup	3.2	20
Spinach, canned, drained solids ½ cup	2.5	10
Black-eyed peas (cowpeas), boiled, 1 cup	1.8	10
Spinach, frozen, chopped, boiled ½ cup	1.9	10
Grits, white, enriched, quick, prepared with water, 1 cup	1.5	8
Raisins, seedless, packed, ½ cup	1.5	8
Whole wheat bread, 1 slice	0.9	6
White bread, enriched, 1 slice	0.9	6

Even if the child is not a picky eater, it is safe to assume that around 85-90% of most children's conventional diet is seriously lacking in vital nutrients. The graph to the left shows several non-meat foods that have iron. Raisins are an example of a healthy snack that is also a good source of iron (see page 128). Nuts (which contain iron) should not be given to our sons in solid form due to the risk of choking. Organic Almond Butter or Peanut Butter may be purchased for our boys and given to them on whole wheat organic bread. Avocados are an essential part of Spanish cuisine, and organic avocados can be purchased at Whole Foods at the price of four avocados for $5.00. If our sons are given organic avocados every now and then it would be a good source of iron (see page 128) that at the same time increases nutrient absorption (look at screenshot below).

Better Nutrient Absorption

Research has found that certain nutrients are absorbed better when eaten with avocado. In one study, when participants ate a salad containing avocados, they absorbed five times the amount of carotenoids (a group of nutrients that includes lycopene and beta carotene) than those who didn't include avocados. (ref)

Iron

Women and teenage girls need at least 15 mg a day, whereas men can get by on 10

It is important that children get about 10 to 12 mg of iron per day, preferably from their diet. Breastfeeding is the best insurance against iron deficiency in babies.

Most at risk of iron deficiency are infants, adolescent girls and pregnant women

Iron deficiency in infants can result in impaired learning ability and behavioral problems. It can also affect the immune system and cause weakness and fatigue.

To aid in the absorption of iron, eat foods rich in vitamin C at the same time you eat the food containing iron. The tannin in non-herbal tea can hinder absorption of iron

Take iron supplements and your vitamin E at different times of the day, as the iron supplements will tend to neutralize the vitamin E

Vegetarians need to get twice as much dietary iron as meat eaters

While most fruits have some iron, probably the best source of iron for children is raisins, which are rich in iron. Other fruits which have a good amount of iron are
Avocado
Blackberries
Blackcurrant
Boysenberries
Breadfruit
Cherries
Dates
Figs
Grapes
Kiwi
Lemons
Loganberries
Lychee
Mulberries
Pacaan Fruit
Persimmon
Pomegranate
Raspberries
Strawberry
Watermelon

Vegetables:
Amaranth leaves
Bok Choy
Brussels Sprouts
Butternut squash
French Beans
Kale
Leeks
Lima Beans
Peas
Potatoes
Pumpkin
Spirulina
Swiss Chard

Most nuts contain a small amount of iron.
Amaranth
Buckwheat
Cashews
Coconut
Oats
Pine Nuts Pignolias
Pumpkin Seeds
Rye
Spelt
Wheat - Durum
Wheat - Hard Red
Wheat - Hard White

Link that explains on cereal grasses: http://www.wheatgrass.com/book/chapter3.php

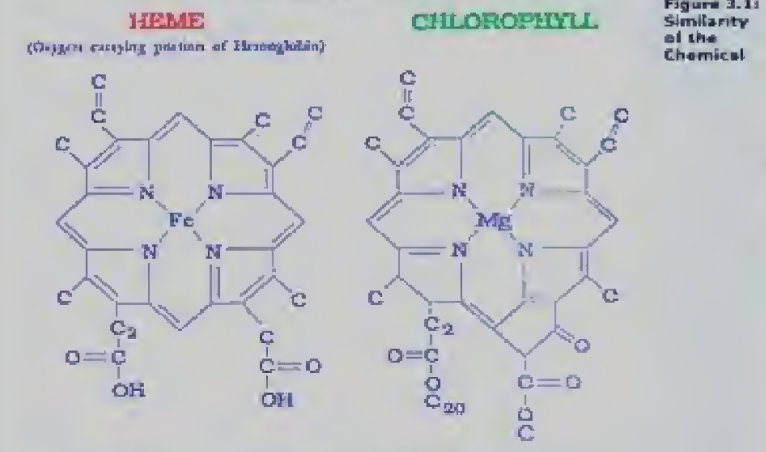


Figure 3.1: Similarity of the Chemical Structures of Heme and Chlorophyll Molecules

Parents can do much for their children's well being if they choose to educate themselves. By ensuring that their children have an adequate amount of iron in their diet, and by also including cereal grasses (such as wheat grass or barley grass) in that diet, the child's blood can be kept rich and healthy, and conditions like anemia, which accompany iron deficiency, can be prevented. The Amazing Grass supplement which we used to give our boys, and which we are requesting (see page 78) contained cereal grasses. Chlorophyll (the substance which makes plants green) is present in cereal grasses, and has a molecular structure that is highly similar to hemoglobin(see also pages 35 & 121). It in fact stimulates hemoglobin generation, thus helping to prevent anemia (see page 35).

Cinnamon, Ground
2.00 tsp
11.84 calories
Nutrient Amount DV (%) Nutrient Density World's Healthiest Foods Rating
manganese 0.76 mg 38.0 57.8 excellent
dietary fiber 2.48 g 9.9 15.1 very good
iron 1.72 mg 9.6 14.5 very good
calcium 55.68 mg 5.6 8.5 very good
World's Healthiest Foods Rating Rule
excellent DV>=75% OR Density>=7.6 AND DV>=10%
very good DV>=50% OR Density>=3.4 AND DV>=5%
good DV>=25% OR Density>=1.5 AND DV>=2.5%

When one embraces the very valid concept of food being preventive medicine, (see page 38), each ingredient that comprises every food is analyzed to determine the potential benefits of those individual ingredients. Almost every ingredient found in the YoBaby Organic Yogurts can be considered to be medicinal. Two spices used in the YoBaby Apple & Mixed Berry Yogurts with added iron, cinnamon and nutmeg (see page 120) , actually have medicinal properties. Indeed, it is very wise of Stonyfield to add organic cinammon to this superb yogurt . Not only because of cinammon's numerous health benefits (which will be explained), but also because when added to food, cinnamon actually inhibits bacterial growth and food spoilage, thus making it a natural food preservative. Most likely it is due to these antibacterial and antifungal properties that the Ancient Egyptians used cinnamon for embalming mummies when they had to fill the body cavities with spiced preservatives.

The latest research on cinnamon shows that by enhancing insulin signaling, cinnamon can prevent insulin resistance even in animals fed a high-fructose diet! A study published in the February 2004 issue of Hormone Metabolism Research showed that when rats fed a high-fructose diet were also given cinnamon extract, their ability to respond to and utilize glucose (blood sugar) was improved so much that it was the same as that of rats on a normal (control) diet. Cinnamon is so powerful an antioxidant that, when compared to six other antioxidant spices (anise, ginger, licorice, mint, nutmeg and vanilla) and the chemical food preservatives (BHA (butylated hydroxyanisole), BHT (butylated hydroxytoluene), and propyl gallate), cinnamon prevented oxidation more effectively than all the other spices (except mint) and the chemical antioxidants. (May 6, 2004)

This spice is native to Sri Lanka (formerly called Ceylon), but since ancient times it has, through trade, reached Ancient Israel (Exodus 30:23, Proverbs 7:17, Song Of Solomon 4:14), the Ancient Roman Empire, and was used in the Middle Ages. Only one teaspoon of cinnamon contains as many antioxidants as one full cup of pomegranate juice, and ½ cup of blueberries.

Cinnamon improves the body's ability to utilize blood sugar , and does wonders for Type 2 diabetics (look at screenshot below). This spice also aids in digestion, so for Stonyfield to add it to their organic yogurt is truly a doubly good thing for children like our eldest son who has a more delicate stomach (since probiotic yogurt also aids in digestion).

In medicine it acts like other volatile oils and once had a reputation as a cure for colds. It has also been used to treat diarrhea and other problems of the digestive system.[24] Cinnamon is high in antioxidant activity.[24][25] The essential oil of cinnamon also has antimicrobial properties,[27] which can aid in the preservation of certain foods.[28]

Cinnamon has been reported[*by whom?*] to have remarkable pharmacological effects in the treatment of Type 2 diabetes mellitus and insulin resistance. The plant material used in the study was mostly from Chinese cinnamon (see Chinese cinnamon's medicinal uses).[29][30] Recent advancement in phytochemistry has shown that it is a cinnamtannin B1 isolated from *C. verum*, which is of therapeutic effect on Type 2 diabetes.[31] with the exception of the postmenopausal patients studied on *C. Cassia*.[32] Cinnamon has traditionally been used to treat toothache and fight bad breath and its regular use is believed to stave off common cold and aid digestion.[33]

The screenshot above speaks of cinnamon's antimicrobial properties, which was already stated by us on page 129. However, it should be of interest to know that a study conducted by Kansas State University found that cinnamon fights E. Coli bacteria in unpasteurized fruit juices. Since there are a growing number of people that are beginning to prefer unpasteurized products, the option of adding some cinnamon to unpasteurized fruit juices should be seriously looked into. We ourselves are not totally against pasteurization, though we feel that the Raw Foods Movement has some valid points in their arguments. We do however think that Ultra-Pasteurization (there are three different types of pasteurization: 1) High Temperature Short Time (HTST), and 2) Ultra Heat Treatment (UHT) also known as Ultra-Pasteurization, and 3) Extended Shelf Life (ESL) treatment) is not that beneficial for the nutritional quality of food, because the intense heat can destroy vital nutrients along with any harmful bacteria. Ultra-Pasteurization processing holds the milk at a temperature of 275 °F for a fraction of a second, while HTST (the process used with most foods) is heated at 161 °F for 15–20 seconds. We do not wish to continue to delve any further into the pasteurization debate, but merely mentioned it because of cinnamon's great potential as a bacteria killer in certain products that are sold unpasteurized.

10 Health Benefits of Cinnamon

Cinnamon Health Benefits Comments (276)

Studies have shown that just 1/2 teaspoon of cinnamon per day can lower LDL cholesterol.

Several studies suggest that cinnamon may have a regulatory effect on blood sugar, making it especially beneficial for people with Type 2 diabetes.

In some studies, cinnamon has shown an amazing ability to stop medication-resistant yeast infections.

In a study published by researchers at the U.S. Department of Agriculture in Maryland, cinnamon reduced the proliferation of leukemia and lymphoma cancer cells.

It has an anti-clotting effect on the blood.

In a study at Copenhagen University, patients given half a teaspoon of cinnamon powder combined with one tablespoon of honey every morning before breakfast had significant relief in arthritis pain after one week and could walk without pain within one month.

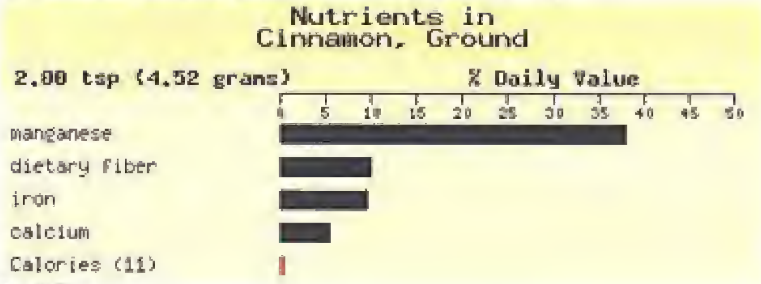
When added to food, it inhibits bacterial growth and food spoilage, making it a natural food preservative.

One study found that smelling cinnamon boosts cognitive function and memory.

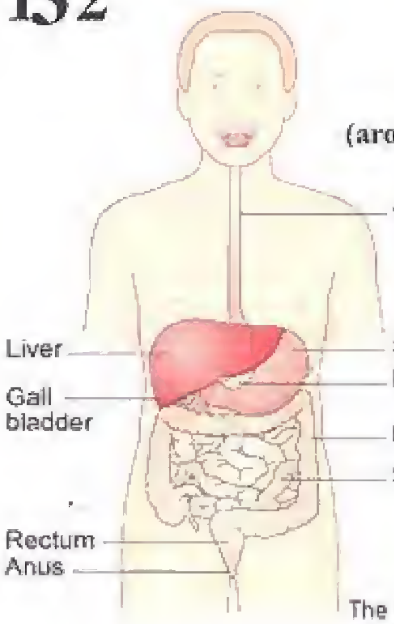
Researchers at Kansas State University found that cinnamon fights the E. coli bacteria in unpasteurized juices.

10. It is a great source of manganese, fiber, iron, and calcium.

Cinnamon is a good source of iron on its own, with two teaspoons providing 10% RDA, so once again Stonyfield shows excellent nutritional judgment in adding cinnamon to their yogurt. Cinnamon, in addition to iron is also a good source of calcium and fiber, but above all of manganese (nearly 40% RDA).



While it is true that most medical experts have stated that manganese deficiency is quite rare, there are nevertheless cases of manganese deficiency due to poor dietary habits. More than 35% of the world population is said to be deficient in this necessary mineral. This mineral is found in our bodies in very minimal amounts, for the human body will contain at the most 20 mg of manganese concentrated in the pancreas, kidneys, liver, heart, and bones. Though manganese ensures healthy bone structure (it aids in the absorption of calcium), it is also vital for normal functioning of the brain and nerve areas of the body. Manganese metabolism is similar in some aspects to that of iron. Manganese is absorbed in the small intestines (just like iron) where the total absorption rate is very high



(around 40%) despite its slow absorption process. In this it differs from iron, which has a lower absorption rate. However, similar to the iron absorption process, manganese is only absorbed according to the concentration percentage of this mineral that is already found in the body, in order to prevent excess.

The greatest influence on iron absorption is the amount stored in your body. Iron absorption significantly increases when body stores are low. When iron stores are high absorption decreases to help protect against iron overload(1,3).

The small intestine is divided into three structural parts:

- **Duodenum** 26 cm (9.8 in) in length
- **Jejunum** 2.5 m (8.2 ft)
- **Ileum** 3.5 m (11.5 ft)

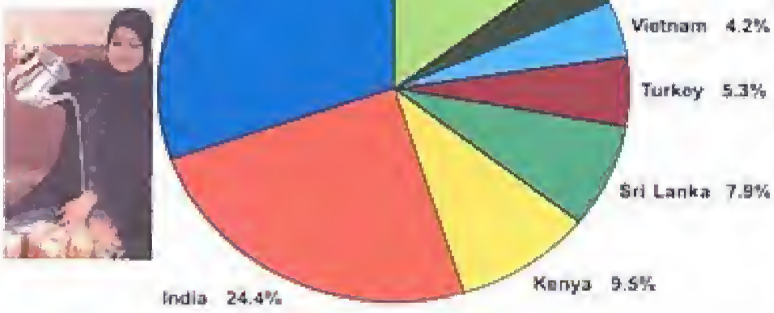
Manganese supports the utilization of several vitamins such as Vitamin C, Vitamin E, choline (see page 88), and other B vitamins. Inadequate choline utilization can cause loss of muscle strength. In the screenshot below are listed the health benefits of manganese.

Benefits: The health benefits of **manganese** are tilted towards overall wellness of human beings. Here is the list of most significant of these benefits:

- **Healthy bones:** Manganese is very essential for proper and normal growth of human bone structure. It is a very effective mineral, which aids in increasing the mineral density of spinal bone, especially so in case of post menopausal women. Most women after post menopause suffer from **manganese** deficiency.
- **Free radicals:** Due to antioxidant properties of **manganese**, the health benefits of **manganese** include a special function of controlling the flow of free radicals in human body. These radicals are capable of damaging human cells and thus, manganese control these radicals to prevent any type of damage.
- **Sugar level:** Manganese has also exhibited its efficiency in controlling the level of sugar in human blood. This may further prevent the occurrence of certain diseases like **diabetes**.
- **Epilepsy:** Low level of **manganese** can act as a trigger for epileptic seizures. Manganese supplements can aid in controlling the possibility of any minor or major epilepsy seizure.
- **Metabolism:** Metabolism happens to be one of the vital functions of **manganese**. Manganese activated enzymes help in metabolism of cholesterol, amino acids as well as carbohydrates. It is also important for the metabolism of **Vitamins** such as Vitamin E and Vitamin B-1.
- **Inflammation and sprains:** Manganese is a widely known remedy for sprains as well as inflammation as it helps in increasing the level of superoxide dismutase resulting in the activity as an antioxidant.
- **Preventing osteoporosis:** Manganese supplements are known to relive osteoporosis and osteoarthritis syndrome.
- **Alleviating PMS syndrome:** Women are found to suffer from premenstrual syndrome. In such situations, **manganese** helps to alleviate the mood swings, headaches, depression and irritability to a considerable extent.
- **Aids in vitamin absorption:** Manganese helps absorb vital vitamins like vitamin B and E and **minerals** like **magnesium**.
- **Brain and nervous system:** Manganese is essential for healthy functioning of the brain and it is also used to treat specific nervous disorders.
- **Glucose Metabolism:** Manganese also aids in glucose metabolism in human body. This is one of the most important health benefits of **manganese** to provide proper resources to different body parts.
- **Digestive track:** Manganese is a mineral, which is helpful in maintaining the functioning of digestive track. This further improves the absorption of fat in the process of digestion.

Required Daily Amount (in mg)
Infants, 0-5 months 0.5-0.7
Infants, 5-12 months 0.7-1.0
Children, 1-3 yrs. 1.0-1.5
4-6 1.5-2.0
7-10 2.0-3.0
11+ 2.5-5.0

The necessary amounts of manganese required by children according to their age are shown on the graph to the left. Adults require more or less the amount that a child 11 years or older would need (adult requirements are shown on the screenshot to the upper right side of page 134). The common perception of many Western doctors is that manganese deficiency is rare, even though iron deficiency is not, and manganese is a less abundant element than iron, for iron is the most common element in the Earth, and the fourth most common in the Earth's crust, whereas manganese is the 12th most abundant element in the Earth's crust. Rich food sources of manganese are nuts, whole grains, spices, and legumes. Meat, fish and dairy products contain only insignificant amounts, but tea leaves are also known to contain a fair amount of this mineral. All the foods that have just been described as being rich in manganese are greatly consumed in the East. Since the spice trade developed throughout the Middle East, and some of the most medicinal spices are originally from Eastern origin, it makes sense that non-Western countries consume more spices than what is commonly found in the typical Western diet. Tea is also mostly grown in Eastern countries as the circle graph which can be seen above left shows, which is in part the reason why they drink more tea.



Is Manganese Deficiency Possible?

It is generally believed that manganese deficiency cannot arise in humans because the element is widely distributed in foodstuffs. However, it has now been found that most Western diets, even best planned, tend to be deficient in this important trace mineral, as many of our most frequently eaten foods, such as meat, fish and dairy products contain only insignificant traces of manganese.

The minimum dietary requirement of manganese varies within species and the genetic strain of the animal.[2] Even though manganese is considered an essential trace element, no official daily recommendation of manganese for humans has been set.[4] However, about 4-5 mg of manganese daily is generally accepted to be an average daily requirement, as a healthy human body uses approximately 4 mg manganese each day in bone/cartilage replacement, lipid and carbohydrate metabolism, as well as in other manganese-dependent enzymatic processes.[34,76,77]

The average Western diet provides between 1-8 mg of manganese daily. However, one must bear in mind that the unofficial RDA is 4 to 5 mg and manganese (unlike iron which is mostly stored and recycled) is excreted quite efficiently from the body.

Among tea-drinking nations (mostly Eastern) the amount of manganese intake is thought to be about 4.6 mg a day, which is basically the amount needed on a daily basis. A healthy person excretes approximately 4 mg of manganese a day, which is the minimum daily amount that should be consumed. Manganese is absolutely essential for glucose utilization as explained on page 132.

Link To Article Shown In Screenshot Below:

http://jn.nutrition.org/cgi/content/abstract/120/9/1075

Minerals and Trace Elements

Effect of Manganese Deficiency on Insulin Binding, Glucose Transport and Metabolism in Rat Adipocytes[1]

DEBORAH L. BALY, JOANNA S. SCHNEIDERMAN AND ADRIENNE L. GARCIA-WELSH

Department of Nutrition, Rutgers, The State University of New Jersey, New Brunswick, NJ 08903

ABSTRACT The effect of manganese deficiency on insulin binding, glucose transport and metabolism in isolated adipose cells from Sprague-Dawley rats was investigated. Offspring from Mn-sufficient female rats

lular binding of insulin to its receptor, facilitates the physiological actions of insulin and mimics the action of the hormone. Although the role of insulin receptor phosphorylation in the mechanism of insulin action is

Animal studies have shown that manganese deficiency can lead to glucose intolerance (link & screenshot of study shown to the left). Manganese functions with vitamin K in the formation of prothrombin, which is a blood-clotting protein. A perhaps lesser known fact is that maganese deficiency can cause changes in hair pigmentation, as well as slowed hair growth.

DISCUSSING MANGANESE OVERLOAD AND ITS CAUSES

Manganese is a vital mineral for health, however, excess levels of it are of course unhealthy. Just like iron toxicity can put a child's health in peril, so does manganese toxicity, which can lead the child to experience learning difficulties. Since manganese overload is less common than iron overload (and is mostly due to diverse forms of industrial pollution), giving the child tested spring water instead of regular tap water, and avoiding a conventional diet can significantly reduce potential overload from excessive exposure to manganese. We feel that this topic deserves at least some commentary because many healthy foods (such as whole grains and legumes) are rich in manganese, and there has been some concern over cases that have arisen of manganese toxicity among children.

Adults are generally able to eliminate manganese eaten in food, though infants have a higher absorption and lower excretion rate of this mineral compared with that of adults, and they also have a more sensitive nervous system. This of course changes as they grow. We have seen on some sites great commotion about infant and toddler formulas, and how they supposedly are contributing to manganese overload. While it is true that there are several conventional formulas out there that are of an undeniably inferior quality (despite their attractive and appealing marketing campaigns), a study that we did on several formulas (including conventional ones) shows that some formulas either have no manganese, or percentages so small (in micrograms), that it would prove very difficult for an infant to succumb to manganese toxicity due to dietary causes. Pollution, and tainted drinking water mixed with the formula is of course another matter.

Nutrients	5 fl oz	Baby's Only Organic® Toddler Dairy
Energy	cal	100
Protein	g	2.6
Fat (Lipids)	g	6.3
Carbohydrate	g	10.0
Water	g	140
Fatty Acids		
Linoleic (LA)	mg	1000
Linolenic (ALA)	mg	128
Vitamins		
Vitamin A	IU	300
Vitamin D	IU	60
Vitamin E	IU	2
Vitamin K1	mcg	8.6
Thiamin (B1)	mcg	100
Riboflavin (B2)	mcg	100
Vitamin B6	mcg	60
Vitamin B12	mcg	0.2
Niacin	mcg	1100
Folic Acid	mcg	15
Pantothenic Acid	mcg	450
Biotin	mcg	3
Vitamin C	mg	20
Choline	mg	12
Inositol	mg	5
Minerals		
Calcium	mg	135
Phosphorus	mg	90
Magnesium	mg	9
Iron	mg	1.8
Zinc	mg	0.7
Manganese	mcg	21
Copper	mcg	70

The Toddler formula that we used to give our boys, and which we are requesting for them had 21 mcg (micrograms) per 5oz bottle (circled on screenshot to the right). One tablespoon of pure maple syrup (not corn syrup-based pancake syrups) contains 700 mcg of manganese, or about 33% of the daily value that an adult needs. Which means that that one tablespoon of maple syrup would equal 33.33 bottles of Baby's Only Toddler Formula in the percentage of manganese! So obviously the formula is not the problem, as we are dealing with minute quantities here.

One to three year olds need 1 to 1.5 mg (milligrams) of manganese, while four to six year olds need 1.5 to 2 mg of the mineral (see page 133). There are one thousand micrograms in a milligram, as a microgram is 1/1000 of a milligram. So the 21 mcg in a bottle of Toddler formula (see page 135) is equal to 0.021 mg.

For microgram to milligram conversions go to:

http://www.convertunits.com/from/microgram/to/milligram

The problem really stems from pollution. Pollution from manganese containing gasoline additives such as MMT (Methylcyclopentadienyl manganese tricarbonyl – quite a tongue twister!) contaminates the environment (including the soil and water sources). The screenshot below, citing a case in which a child was exposed to high levels of manganese from drinking tainted water, will further clarify the main cause of manganese overload as just before stated : pollution.

Grand Rounds

A Child with Chronic Manganese Exposure from Drinking Water

- Full (PDF)
- Related EHP Articles
- PubMed Related Articles
- PubMed Citation
- PubMed:References
- Cited in PMC

Alan Woolf,[1,2] Robert Wright,[1,2,3] Chitra Amarasiriwardena,[3] David Bellinger[4,5]

[1]Department of Pediatrics, Harvard Medical School, Boston, Massachusetts, USA; [2]Department of Medicine, Children's Hospital, Boston, Massachusetts, USA; [3]Channing Laboratory, Brigham and Women's Hospital, Boston, Massachusetts, USA; [4]Department of Neurology, Harvard Medical School, Boston, Massachusetts, USA; [5]Department of Neurology, Children's Hospital, Boston, Massachusetts, USA

Consequently, a well was drilled to supply the home with water. The family had since been drinking water from this well, despite the fact that the water was somewhat turbid and had a distinct metallic taste. Shortly after moving into the home, they noticed that clothes, dishes, and appliances, such as the dishwasher, became tinged with an orange-brown residue that was difficult to clean. Special filters fitted to the well were expensive to install, required continuous maintenance, and did not improve the water significantly, according to parental report.

Four months before the clinic visit, the water was tested for contaminants (Table 1) (*1–3*), and iron and manganese concentrations were both elevated. It is uncertain how the water became contaminated, although the town is highly industrialized and toxic waste dumps near the home had been a concern in the past. The parents and their two sons (16 and 10 years old) subsequently had health assessments. Only the younger boy had abnormally high blood manganese concentrations. This 10-year-old child's serum manganese concentration was elevated at 0.90 µg/100 mL (reference normal, < 0.265 µg/100 mL), with a whole blood manganese concentration of 3.82 µg/100 mL (reference normal, < 1.4 µg/100 mL) (*3*). The family switched to bottled water for drinking, but they continued to use the well water for cleaning, showering, and other household purposes.

On page 135 we spoke of how giving a child bottled spring water from a tested source can greatly reduce the probability of experiencing the sad scenario that is described in the above screenshot. Organic food can also reduce the likelihood of manganese overload because organic land is tested for chemicals (look at link): http://www.chemicalfreekids.com/organic.htm

USEFUL DEFINITION

"Parts per million" is usually abbreviated as "ppm" and means "out of a million."

"Parts per Million" is a way to state the quantity of very low concentrations of substances.

For example, 1 ppm is equivalent to 1 milligram of something per liter (2.12 pints) of liquid (abbreviated as mg/L) or 1 milligram of something per kilogram of solid substance (abbreviated as mg/kg).

In terms of percents, 1 PPM is 10,000 times smaller than 1%.

If a product has 20 ppm of gluten, that would mean it contains 20 milligrams of gluten (about 7 thousandths of an ounce, or 0.007 ounces) per kilogram (2.2 pounds) or per liter.

Conversions of ppm to percents can be done at the below link:

http://www.onlineconversion.com/forum/forum_1130512020.htm

or: http://www.convert-me.com/en/

The EPA (Environmental Protection Agency) recommends a manganese level of 0.05 PPM in drinking water. Most of manganese-related pollution comes from MMT. MMT is a gasoline additive in unleaded gasoline used to increase the fuel's octane rating. An increase in octane rating signifies less susceptibility of the gas igniting.

This additive was introduced in 1974 and banned in the U.S. in 1977 by the Carter administration, only to be reintroduced in 1995 despite the protests of EPA.

Manganese in gasoline is emitted from automobile tailpipes in very fine particles. These particles are carried to small airways deep in the lungs. However, some of the airborne manganese eventually contaminates the surface when it settles on the ground, thus creating soil pollution. Recent studies have shown that there are strong connections between the manganese concentrations found in soils and the distance of those soils from major roadways. Land contamination from this gasoline additive has of course the potential to affect sources drinking water.

Manganese accumulation in the environment may result in significantly increased manganese levels in living organisms. It accumulates in certain plants, as demonstrated in an experimental study on oats and beans. A study of pigeons in Canada, where MMT is used, has shown that urban pigeons have higher manganese concentrations in their bodies than rural pigeons, showing that accumulation of manganese is possible. It is unclear whether most of the manganese emitted from automobiles will remain on surface dust where it may intermittently become airborne again, whether it will be mostly taken up by plants, or whether it will contaminate groundwater in significant amounts.

Over time, the accumulation near roadways and in urban areas may lead to unacceptably high levels in the soil. Apparently this represents a hazard not only to the earth (more reason for an organic diet), but also to the animals who live in areas where this type of pollution is abundant (view screenshot above).

Socially conscious doctors (unfortunately still a minority) have protested against the laws that have allowed this potentially hazardous fuel additive to be made legal again.

http://www.psr.org/chapters/boston/health-and-environment/mmt-manganese-in-gasoline.html

MMT is currently manufactured by the Afton Chemical Corporation,division of Newmarket Corporation.

Fig. 1 Mn toxicity symptoms on cantaloupe leaf

Cantaloupe leaf showing manganese toxicity symptoms when held up to the sun

Pinpoint lesions with halos clustered between veins

Cause: Manganese toxicity is caused by soil pH levels that are below 5.6. Excess soil acidity allows manganese that is normally bound to soil particles to be released and taken up by the plant in very high concentrations, i.e., toxic levels. Manganese levels of 800-900 ppm and above in foliar tissue is usually toxic. Losses to manganese toxicity can be severe. The apparent "spread of the disease" is due to plants in the field where pH is lower developing symptoms first and plants in areas where the pH is not as low developing symptoms days or even weeks later. Growers may have had their soil tested and had spread lime in the fall but still have this problem—low pH in some parts of the field.

One of the reasons for the drop in pH even though lime has been applied is the use of pH lowering fertilizers such as ammonium and urea. Ammonium

Salt levels in the soil (which determine the pH level in that very soil- look at page 48) decrease after heavy rains. So plants that grow in areas where MMT has created substantial soil contamination have a greater probability of succumbing to manganese toxicity after heavy rains, since in low pH soils the likelihood of manganese toxicity increases.

While conventional agricultural "wisdom" says that salt levels increase (and along with it soil pH) by adding nitrogen and potassium fertilizers. Many of these synthetic fertilizers are actually part of the problem by lowering the soil pH, and increasing plant vulnerability in areas that are heavily exposed to MMT-related manganese pollution. Most non-organic farmers use these fertilizers, as the screenshot below with the added link shows.

Conventional fertilizers are toxic on their own, but in this situation they seem to nurture the toxicity of other potentially harmful environmental factors. Some pesticides and fertilizers contain manganese as well, such as Maneb and Mancozeb (links on the next page) (another reason to go organic).

http://www.greenpeace.to/publications/profertil%20report.pdf

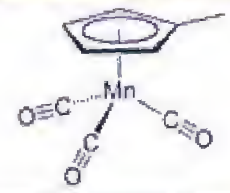
Fertilizers fall into three general categories: nitrogen (N) based, phosphorus (P) based, and combined nitrogen-phosphorus (N-P) based.

The majority of nitrogen based fertilizers are derived from ammonia. In the 1990s, over 95% of all commercial nitrogen fertilizer was derived from synthetic ammonia. Worldwide, the annual production of synthetic ammonia is about 120 million tonnes, of which about 85% is used in fertilizers, including urea (Kroschwitz & Howe-Grant 1995b).

The decomposition of organic soil matter and minerals can increase soil pH naturally while providing much needed high quality nutrients to the plant.

It is necessary to understand that MMT is not like the manganese that one consumes from healthy foods, as it is a totally different compound. MMT is a compound created artificially, that apart from manganese also contains carbon, hydrogen, and oxygen.
Its formula in chemistry is $(CH_3C_5H_4)Mn(CO)_3$.
Manganese in foods are naturally found in those foods, and a healthy body knows how to handle the absorption and excretion of that mineral from dietary sources.
When over exposure results, the manganese in MMT residues can affect the body in ways similar to the manganese that is obtained from foods, but in a way that harms instead of benefitting. The manganese that contaminates the environment is from human –made sources and cannot be compared to the manganese that occurs naturally in the environment such as some rocks that naturally contain this mineral.

Methylcyclopentadienyl manganese tricarbonyl



IUPAC name [hide]
tricarbonyl(methyl-η^5-cyclopentadienyl)manganese

Other names [hide]
MMT

MMT link on Wikipedia:

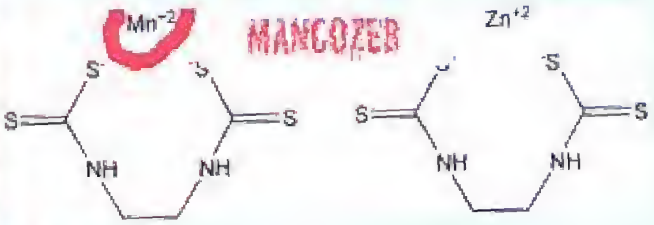
http://en.wikipedia.org/wiki/Methylcyclopentadienyl_manganese_tricarbonyl

In typical situations, there is no need to reduce exposure to manganese. A healthy body regulates the amount of manganese that it either keeps or eliminates based on the foods eaten and the air breathed. Because manganese is the twelfth most common element in the earth's crust, it is always found in measurable concentrations in topsoil. If young children eat soil, it is unknown whether they are able to absorb the manganese in the soil. No studies were located that would show how much, if any, manganese can be absorbed after eating soil. Despite this lack of information, manganese concentrations in soil are not typically high, and therefore, the amount of manganese that children might take in from eating soil should not be a great concern. However, if soil in your neighborhood contains large amounts of manganese from hazardous waste or other environmental sources, you should prevent your children from eating it and discourage children from putting their hands in their mouths or performing other hand-to-mouth activity

---

Manganese Containing Pesticides Mentioned On Page 138 (Manganese is circled red):

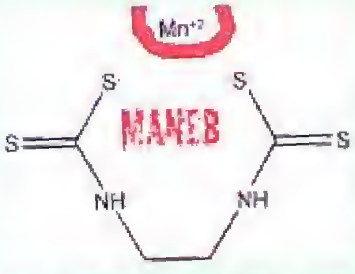
Mancozeb: http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC35080



Molecular structures shown.

Maneb

http://www.pesticideinfo.org/Detail_Chemical.jsp?Rec_Id=PC32909



While it is true that there are those who think that continuous exposure to manganese through air and water , in addition to the high consumption of foods rich in manganese (such as tea, peanut, nut, and wheat products) can easily lead to an overload of this mineral, that scenario is not as easily realized. First of all, most Western diets tend to be deficient of this mineral, as nuts (with the exception of the peanut- mostly genetically modified), spices, whole grains, and legumes unfortunately are not habitual foods in the highly processed typical American diet.

Western Diet

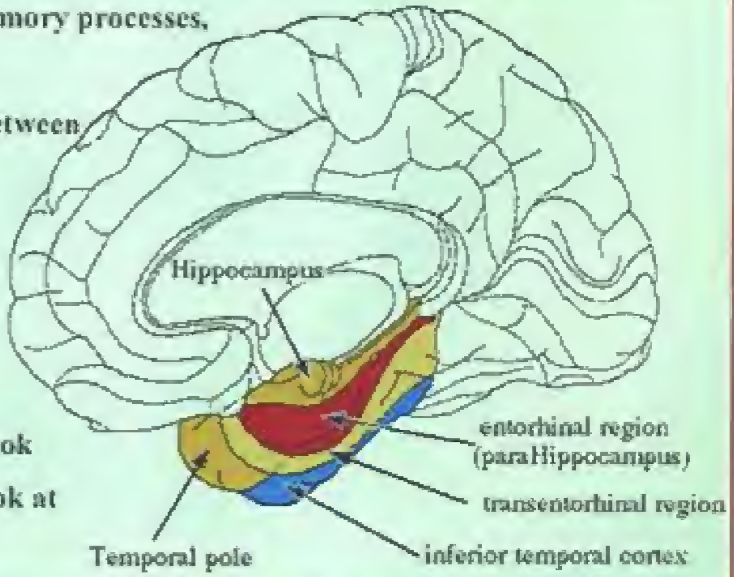
Most cases of manganese overload are due to pollution. Calcium deficiency increases manganese absorption, so a person with sufficient calcium intake will seldom end up with excess levels of dietary manganese.

Manganese overload influences the body's copper and iron metabolism, and excess levels of the mineral interferes with the absorption of dietary iron, so manganese toxicity can lead to iron deficiency, and in most cases the toxicity is worsened by having calcium deficiency.

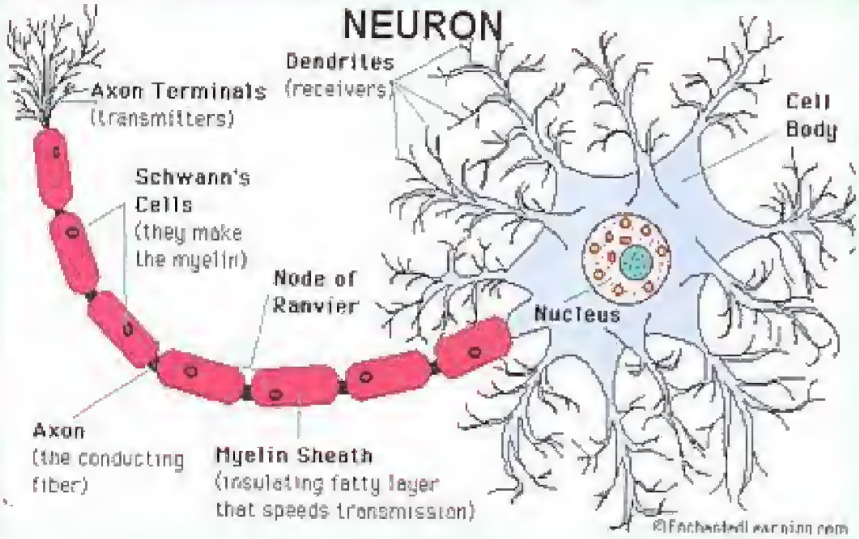
The connection between manganese toxicity and learning difficulties in children is deeply related to how cholesterol is produced in the body and how varying levels of cholesterol can affect certain functions of the body. Some of the enzymes that regulate the biosynthesis (production) of cholesterol depend on manganese in order to produce cholesterol. This is why manganese deficiency is one of the causes of hypocholesterolemia (having extremely low cholesterol levels) as explained on page 93 of this report. The hippocampus plays a central role in memory processes, which of course affects one's ability to learn.

Research suggests that there appears to be a link between the cholesterol levels that are present in the hippocampus and learning performance. Neurons are nerve cells that transmit nerve signals at a speed equivalent to up to 200 miles per hour.

A neuron consists of: 1) a cell body called a soma, and 2) dendrites which are signal receivers. They look like little branches stemming from the cell body (look at screenshot showing neuron structure on page 141).



Not coincidentally, the hippocampus is unique in a way that is very beneficial to us, and obviously G-D (knowing the importance of this area) has engineered it this way.



Unlike most cells, neurons cannot regrow after damage, but this is not the case with the hippocampus. The hippocampus can regenerate neurons. However, a 2002 study showed that folic acid deficiency can contribute to neuron death and even impair the hippocampus' ability to repair neuron damage. There are about 100 billion neurons in the brain.

Link of study: http://www.jneurosci.org/cgi/content/full/22/5/1752

Cholesterol levels are regulated by the hormone ghrelin, which is known to boost the appetite

The brain only makes up 2% of the body's weight, yet it contains 25% of its cholesterol. The brain also makes its own cholesterol. Researchers at the University of Cincinnati found that cholesterol levels are regulated in an area of the brain called the hypothalamus by the hormone ghrelin that is known for boosting appetite. This hormone inhibits the brain protein known as Melanocortin 4 receptor (MC4R) in the brain, which is involved in feeding behavior and the regulation of metabolism. It was discovered in 1998 that MC4R mutations are connected with obesity. This is because MC4R is responsible for decreasing one's appetite, so a failure in the protein's normal function would result in an insatiable appetite. Ghrelin is responsible for regulating calorie intake and energy expenditure (how much energy is used), which is why it inhibits (stops or limits) MC4R when fat stores in the body are increasing. The brain has two major pools of cholesterol. One of these pools is in the plasma membranes of all brain cells, and the other is in the myelin, which is a fatty substance that insulates and protects spinal nerve cells, and allows for faster signal transmission (look at the screenshot above).

The myelin is made up of 30% protein and 70% fat. Therefore, as myelin increases in children, their coordination improves, because myelin aids the conduction of nerve signals. Damage to the myelin results in impaired nerve signaling, and may impair normal sensation, movement, and thinking, so the quality of cognitive functions is dependant on the state of the myelin.

Useful Definition: **Plasma Membrane:** This is the cell's outer membrane (see page 102) that is responsible for separating the contents of the cell from its outside environment, while at the same time regulating what enters or exits the cell.

Link of article screenshot below: http://forum.lowcarber.org/showthread.php?t=42535

John, some cholesterol in the blood does get into the brain inspite of what you read in those webpages. But it does not appear to be much and most of the cholesterol that the brain needs does appear to be synthesized in the brain. I was more off base than you were. I really thought that most of the cholesterol that the brain needed came from the blood especially after confirming that astrocytes have LDL receptors.

I have never come across a nutrition or biochemistry textbook that indicates that brain is also a tissue in the human body that regularly synthesizes cholesterol in situ, in an adult. Of course textbooks are rarely current.

I think Steve may have mentioned that statins may also have some protection against Alzheimer's. I think I have figured out why they help with heart disease and I really thought that by spending all of this time digging I could come up with an explaination of why they may help with Alzheimer's but I must admitt that I'm stumped.

If I really dig into an area I can usually come up with some kind of explaination, it may not always be right, but my nature is to try to make some sense out of all of this wonderful data that is coming in.

To me, data is useless unless you can make some sense out of it that may provide a clue about how diet is affecting human health.

Plaques along the carotid arteries and then reduction in blood flow to the brain seemed promising to me as a way to try to explain why too much cholesterol in the brain itself may lead to Alzheimer's (increased free radical formation with increased oxidized cholesterol leading to protein like plagues being formed inside neurons). I just could not get there based on what I read.

--
Martin Banschbach, Ph.D.

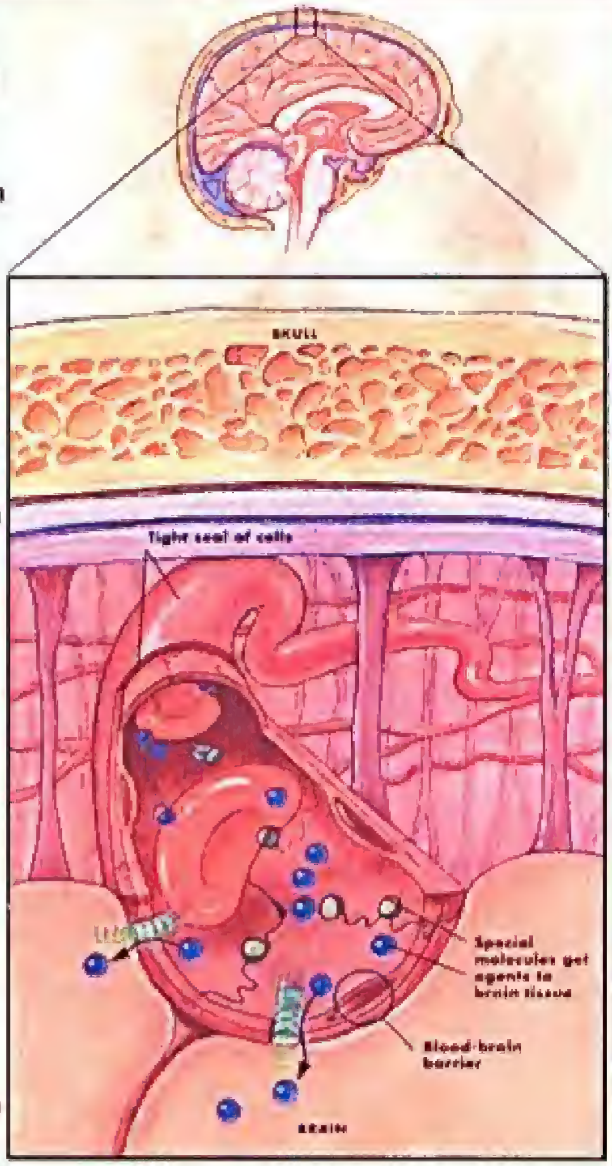
Note: The article shown in this screenshot uses the term VLDL which stands for " Very Low Density Lipoprotein" Cholesterol. Learn more about it at link below: http://en.wikipedia.org/wiki/Very_low-density_lipoprotein

The blood-brain barrier is the name given to a natural defense mechanism that is meant to protect the brain from harmful pathogens or toxins. G-D, who created man, understood the importance of the brain as control center of the body, so HE designed complex biological systems within our bodies to protect it. Remarkably enough, this barrier does not block oxygen and nutrients (which are vital for brain cells), but only potentially harmful substances.

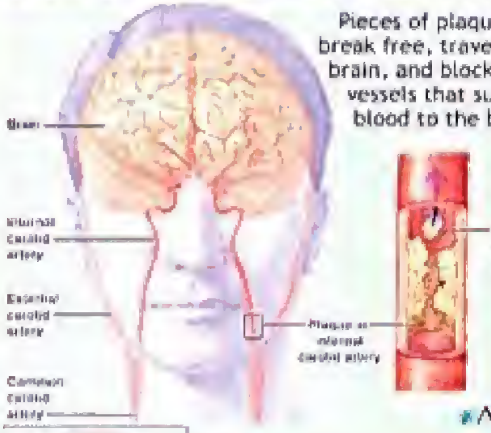
Learn more about Blood-Brain Barrier at: http://en.wikipedia.org/wiki/Blood-brain_barrier

It consists of a "wall" of tightly packed cells which line the tiny blood vessels that are spread out across the brain (see illustration on page 143). Between these tightly packed cells there is a kind of mortar known as a "tight junction". The tight junction prevents molecules in the blood from slipping through. The other part of the barrier consists of other brain cells and protein pumps, which are actually proteins that can "pump out" compounds that pose a threat to a cell. It is this barrier that also prevents lipoprotein cholesterol (see page 92) from entering the brain and being absorbed by brain tissue, though there are some who say that under normal circumstances minute quantities of this cholesterol in the blood can actually pass through the barrier (see the screenshot of a scientist's comment shown above left with provided link).

Those who state that there is limited penetration through the blood-brain barrier have also said that under abnormal circumstances certain star shaped cells called astrocytes (notice the "astro" in their name, and look at the illustration way below showing them) that are in the nervous system may put cholesterol into the brain fluid from either LDL (see page 92) or VLDL (see page 142). These cells normally are supposed to keep blood cholesterol out of the brain, but abnormal circumstances can perhaps alter these cells' normal function (such as cholesterol overload in the body caused by manganese overload, since manganese is crucial for the production of cholesterol).

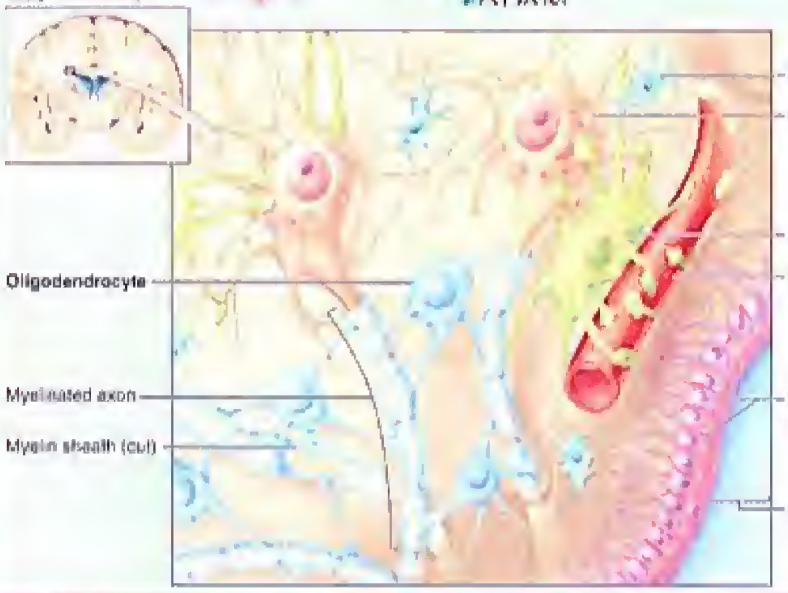


Blood brain barrier is formed by specific nueroglial cells called astrocytes These astrocytes are of two types :1) Fibrous astrocytes and 2) protoplasmic astrocytes. The fibres of these astrocytes forms a network with capillanes of blood vessels that supply blood to brain



Pieces of plaque can break free, travel to the brain, and block blood vessels that supply blood to the brain

Look at the article screenshot on page 142 to understand this illustration shown to the left.



Just like having low levels of cholesterol can negatively affect brain function (including the ability to learn), very high levels of cholesterol can also have a negative impact on the brain. Very high levels of cholesterol have been linked to Alzheimer's. So if manganese toxicity triggers an excess production of cholesterol, it is easy to understand how that

might overwhelm the blood-brain barrier, and thus weaken its ability to filter what enters the brain. According to a book titled " Basic neurochemistry: molecular, cellular, and medical aspects" , brain cholesterol tends to increase with age" (screenshot of an excerpt that is found on page 39 is shown below, link is also provided below).

in Figure 3-6. Once formed, brain cholesterol turns over very slowly, and there is both metabolic and analytic evidence to indicate an accretion of brain cholesterol with age.

It seems that both body fat as well as age does somehow affect the production of cholesterol, so obese children who suffer from manganese toxicity may be at an increased risk for learning difficulties. However, though brain cholesterol increase (to a mild extent) may be normal during the aging process, only abnormal environmental and /or dietary factors can trigger the abnormal functions that end up jeopardizing one's health.

http://books.google.com/books?id=Af0lyHtGCMUC&pg=PA39&dq=the+biosynthesis+of+brain+cholesterol&hl=en&ei=1z2iTN29MISBtAeIwenRBA&sa=X&oi=book_result&ct=result&resnum=3&ved=0CDoQ6AEwAg#v=onepage&q=the%20biosynthesis%20of%20brain%20cholesterol&f=false

Turnover: The movement of something into, through, and out of a place, also the rate at which a thing is depleted and replaced.

It is believed that cholesterol turnover is strongly correlated with body fat. For example, it has been shown that cholesterol turnover is higher in obese individuals as compared with nonobese subjects, and that the excess of body fat correlates significantly with the daily production of cholesterol [14] It is thought that different

The brain is diverse in composition, structure, as well as in function. So a study that is done on the brain as a whole will only give partial insight as it will only yield average values because it does not give a clear understanding of the metabolic differences that occur in regional areas. Each region of the brain has a specific function, so regional studies are all the more relevant in a quest to understand the relationship of brain cholesterol precisely because of the emerging state-of that very knowledge. Science knows a great deal about cholesterol synthesis in the liver and on the intricate workings of non-cerebral cholesterol. However, very little is still known about brain cholesterol, though recent studies are slowly revealing some of the unknown workings within the cholesterol-brain relationship. Almost all the brain cholesterol is made locally in the brain (as shown in article screenshot on page 142). As we have said on page 143, there is a blood-brain barrier which protects the

brain from exchange with the lipoprotein cholesterol that circulates in the body. As a result under normal circumstances very little lipoprotein cholesterol penetrates the brain.

When discussing cholesterol disturbances in relation to age-related diseases of the nervous system, it is important to consider aging-induced changes in cholesterol metabolism. A number of metabolic changes have been reported to occur during normal aging in both animals and humans [21]. Reduced physical activity,

Maintaining the proper level of cholesterol is necessary for proper neuronal membrane function, but in order to achieve that goal one must understand what factors can alter the equilibrium (balance) of the cholesterol regulatory process that normally exists. As long as conditions that promote a healthy body are maintained, the body is equipped with all the necessary functions required to regulate itself, because G-D designed it that way. Cholesterol in itself is not really harmful, the real peril (as stated on page 91) is damaged cholesterol and artificial fats.

The low cholesterol craze has also led to health problems in our society because cholesterol is so essential for multiple body functions (see screenshot at the bottom of page 92). Of course this confusion with regard to the true nature of cholesterol has benefited many within the medical establishment while provoking denunciations of indignation among a minority of truly ethical doctors who still value true healing over profits. Doctor Mercola, who is part of this group, is the author of the comment below on the importance of cholesterol.

Cholesterol is Needed to Help Your Brain Cells Communicate

Posted By Dr. Mercola | November 24 2001 | 5,297 views

Cholesterol in your brain is key to the cell connections needed for memory and learning.

Past research has suggested that brain "support cells" known as glial cells produce a substance that allows the brain's nerve cells, or neurons, to communicate.

Cholesterol levels in the blood do not determine the brain's supply, as blood cholesterol molecules are too large to cross the blood-brain barrier. The blood-brain barrier is a mechanism that strictly controls the type of molecule allowed to enter into the brain from blood vessels.

Instead, glial cells appear to churn out their own cholesterol supply. The researchers zeroed in on cholesterol through experiments with cells in which the lipid triggered the formation of synapses -- the connections through which nerve cells communicate.

Thus the availability of cholesterol appears to limit synapse development.

In addition, the investigators found that, when cultured alone, neurons produced some cholesterol. But only when glial cells were present was there a cholesterol supply abundant enough for "massive" synapse formation.

According to the researchers, these findings suggest that any "genetic or age-related defects" in the brain's cholesterol use may impair the circuitry behind mental functioning

Science November 9, 2001;294:1354-1357

Link To Article Shown In Screenshot Below:

http://www.sciencedaily.com/releases/2009/02/090223221430.htm

ScienceDaily®
Your source for the latest research news

ENTER NOW FOR
ONE DAY MAKE

News | Articles | Videos | Images | Boo

Health & Medicine | Mind & Brain | Plants & Animals | Earth & Climate | Space & Time

Science News

Share

Cholesterol-Reducing Drugs May Lessen Brain Function, Says Researcher

ScienceDaily (Feb. 26, 2009) — Research by an Iowa State University scientist suggests that cholesterol-reducing drugs known as statins may lessen brain function.

See Also:

Health & Medicine
- Cholesterol
- Heart Disease
- Diet and Weight Loss

Mind & Brain
- Dieting and Weight Control
- Intelligence
- Brain Injury

Reference
- High density lipoprotein
- Low density lipoprotein
- Cholesterol
- Hypercholesterolemia

Yeon-Kyun Shin, a biophysics professor in the department of biochemistry, biophysics and molecular biology, says the results of his study show that drugs that inhibit the liver from making cholesterol may also keep the brain from making cholesterol, which is vital to efficient brain function.

"If you deprive cholesterol from the brain, then you directly affect the machinery that triggers the release of neurotransmitters," said Shin. "Neurotransmitters affect the data-processing and memory functions. In other words -- how smart you are and how well you remember things."

Shin's findings will be published in this month's edition of the journal *Proceedings of the National Academy of Sciences*.

Ads by Google

Simvastatin Side Effects
Have Rhabdomyolysis from High 80m Simvastatin? You May Have a Lawsui
Anapolschwartz.com/Statin-Lawsuit/

I Had High Blood Pressure
Now it's down to 120/75
Find out how I did it without drugs
resperate.com

Neurological Services
Learn About Tufts Medical Center's Care & Services For Strokes Today!
tuftsmedicalcenter.tv

Lower Your Cholesterol
Find Cholesterol Lowering Foods
Get Info From Nutrition Experts.
HealthDesk.com

Related Stories

New Insights Into Link Between Anti-Cholesterol Statin Drugs and I
(July 7, 2010) — Scientists are report explanation for the symptoms of anxie depression that occur in some patient

Research done by an Iowa State University in 2009 contributed its own useful part to understanding the complex relationship that exists between cholesterol and brain function, as well as between the factors that influence cholesterol production. However, though their finding of statins decreasing brain function is an important step in promoting awareness on an important health issue, we were disappointed to see how they nevertheless resorted to partially advocating the use of statins by speaking of their mythical usefulness. Statins interfere with cholesterol production by blocking the enzyme in the liver that is responsible for making cholesterol. It appears that they also somehow hinder the brain's ability to make cholesterol. Statins also cause dangerous side effects, a fact that has been widely proven by 900 studies. Our hats go off to Dr. Mercola who wrote a truly enlightening article on the danger of statins. May there be more ethical doctors like him.

Link of article:

http://articles.mercola.com/sites/articles/archive/2010/07/20/the-truth-about-statin-drugs-revealed.aspx

We found interesting a comment made by Dr. Mercola in the article whose link is shown on page 146, so we made a screenshot out of it (below). The comment is based on his experience with patients, and clearly shows the many fallacies that comprise the supposed cholesterol-heart disease connection.

I have seen a number of people with total cholesterol levels over 250 who were actually at low risk for heart disease due to their elevated HDL levels. Conversely, I have seen many people with cholesterol levels under 200 who had a very high risk of heart disease, based on their low HDL.

Unfortunately, as a considerable percentage of the medical establishment is driven by financial motives (PROFIT$), safe, natural alternatives for cholesterol reduction are not even considered. Even people who do not really need to reduce their cholesterol have been prescribed these drugs.

Big Pharma Targets Children With Statins

Date: [illegible]

Keywords: Pfizer, Cholesterol, Heart Disease, Statins

The statin drug Lipitor is already approved for children in the US (since 2002) but not yet as the EU-approved chewable type. Children are generally excluded from drug studies before a new medication is approved. US researchers from West Virginia University said that universal cholesterol screening among children will allow early diagnosis and appropriate treatment of children with high cholesterol, hopefully preventing arterial disease. They added that the ripple effect of universal child screening "could lead to the prevention of premature cardiac events in adults that may have otherwise gone undiagnosed."

Now even a children's chewable version of Lipitor in the European Union, and a non-chewable version in the U.S. are in use. As part of Pfizer's (the maker of Lipitor) marketing campaign, they are trying to use their connections within the government to demand universal cholesterol screenings in schools. Public schools have long over stepped their place as supposed centers of education, when in reality they cater to special interests in exchange for fat commissions that do nothing to improve the inferior quality of "education" which they provide. From junk food vending machines & cheap processed cafeteria food, to school social workers and other quacks that are ever hasty to place false labels on a child in order to $ee their incomes grow, to teachers who probably cannot teach effectively and label students in order to mask their own incompetency, and now this, cholesterol screenings. If this ever goes through, no doubt the participating schools will be $eeing a lot green from Big Pharma.

One cannot help but to marvel at the gullibility of some parents who would actually fall for this, with their blind faith in the system and lack of independent thought.

Many doctors are now calling for universal school screening of children for high cholesterol. This invasion of the home and of parents' rights would lead to more and more statins being given at a younger and younger age.

http://www.anh-usa.org/children-are-being-exploited-to-extend-pharmaceutical-patents/

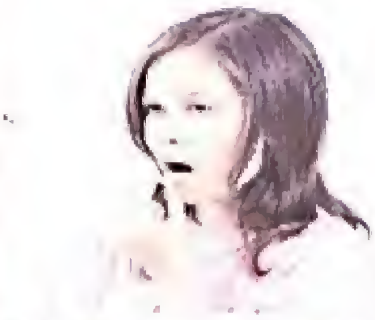
Even if the child is at a greater likelihood of developing certain conditions, simple research would reveal that these drugs do more harm than good. Compare the prices of Lipitor on page 148, and think how much more rational it would be to spend that money on organic food and supplements instead of on this drug or on other non- necessities such as video games or sweat-shop made brand name clothes.

Link: http://www.thehealthierlife.co.uk/natural-health-articles/heart-disease/statins-heart-disease-lipitor-side-effects-children-77623.html

Children Are Being Exploited to Extend Pharmaceutical Patents

July 13, 2010

Print This Post



Want to protect your kids from high cholesterol? Just give 'em drugs—like the new, chewable form of Lipitor. Yes, chewable. Like candy. A new **Action Alert** asks Congress to repeal a really rotten law that encourages this.

Lipitor, the world's top-selling drug—made by Pfizer, the world's largest pharmaceutical company—has just been approved for use with children in the European Union. It is already approved for children in the US. The motivation is obvious: Lipitor's 2009 sales were about $13 billion, but its US patent expires at the end of November 2011. This means Pfizer will quickly lose much of its Lipitor revenue once the generic competition hits the market. The company is desperately trying to boost its sales everywhere it can before then.

Instead of buying these drugs, parents should give their children a healthy organic diet with organic supplements. Ironically, these drugs can sell for more. The screenshot below is from an online Canadian pharmacy that prides themselves on selling cheaper.

Link to article shown in screenshot below:

http://www.medpagetoday.com/Cardiology/Dyslipidemia/21104?utm_content=GroupCL&utm_medium=email&impressionId=1279001370023&utm_campaign=DailyHeadlines&utm_source=mSpoke&userid=16097

Targeted Lipid Screening in Kids Called Inadequate

By John Gever, Senior Editor, MedPage Today
Published: July 12, 2010
Reviewed by Dori F. Zaleznik, MD; Associate Clinical Professor of Medicine, Harvard Medical School, Boston and Dorothy Caputo, MA, RN, BC-ADM, CDE, Nurse Planner

Earn CME/CE credit for reading medical news

Screening all children for high cholesterol may be the only way to find those needing treatment, researchers said.

Among West Virginia fifth-graders with no family history of premature hyperlipidemia or cardiovascular disease, and therefore not currently recommended for cholesterol screening, 9.5% had LDL levels of 130 mg/dL or higher, according to a study published in the August issue of *Pediatrics*.

That rate was slightly higher than the prevalence in those who did meet published criteria for screening, reported Susan K. Ritchie, RN, MPH, of West Virginia University in Morgantown, W.Va., and colleagues.

Action Points

- Explain to interested patients that current guidelines call for children to undergo cholesterol screening only if they have a family history of early cardiovascular disease or high cholesterol.

The researchers had screened all fifth-graders attending public schools in West Virginia, a total of 20,266 children, regardless of whether they had any risk factors for coronary artery disease.

They also found that 1.7% of those with no family history had LDL levels of at least 160 mg/dL, which would warrant drug treatment under current guidelines

The fact is that schools should be solely for teaching and learning, not to serve as potential recruitment centers for pharmaceutical clients. When you consider the ever decreasing literacy rate in this country, which serves as a clear but unfortunate reflection of our mediocre school system, these fervently suggested screenings appear to be a bad joke on a misguided priority list. According to what can be described as truly disheartening statistics, only 19% of the U.S. adult population has a high level of literacy. This of course has its roots in two factors: 1)Lack of parental involvement in education, and 2) a perhaps technologically equipped but nevertheless inefficient and inferior school system that focuses too much on tests instead of on promoting love of learning, and teaching children how to actually learn.

Literacy Rate - How Many Are Illiterate

Link Of Literacy Statistics Seen In This Screenshot Can Be Found At:
http://www.caliteracy.org/rates/

The literacy rate in the US has many educators in search of answers about this problem that has plagued our country for decades. Instead of decreasing, the numbers of literacy has steadily increased over the years. This raises a lot of questions about our education system, how it is ran, and why there is such a problem with illiterate people in our country.

Greenland has fallen in the number one spot for literacy rates which is defined as anyone over the age of fifteen years old that can read and write. Both males and females have are at 100% literacy. In the US, adults with a high level of literacy are at 19%, a low level of literacy are at 49.6% and a moderate level of literacy at 31.4%. That difference in literacy rates are outstanding.

So why are schools now delving into arenas that are not related to the purpose for which they were originally founded? These proposed screenings only serve to divert attention from much needed education reform.

A QUICK COMMENT

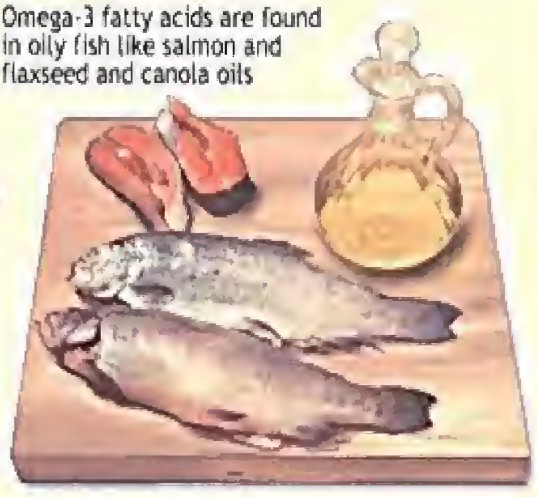
We wish to make a brief statement on something with which we disagreed, that is written in one of the articles whose link is provided in this section on Manganese toxicity and its relation to cholesterol overload.

On page 148 we provided a link to an article on how children have been targeted with statins. Though we find this article highly meritorious, we do disagree with one short comment that the author made recommending krill oil for the regulation of cholesterol levels. We do not recommend following the suggestion of using krill oil as a source of omega-3 fatty acids, as krill is a shrimp-like marine crustacean and according to Biblical dietary laws is an unclean animal, and there are other sources of omega-3 fatty acids that are superior, such as coconut oil, salmon, eggs, flax seeds, pumpkin seeds, and walnuts. Look at the illustration below right, and the bar graph provided to the right. Notice that the foods highest in omega-3 are Biblically clean foods.

In the bar graph, the only Biblically unclean sources that are shown are shrimp and scallop, and their Omega-3 content is not as impressive as the clean food sources. Halibut and Snapper are kosher as shown on this extremely useful list of Kosher fish whose link is provided below :

http://www.kashrut.com/articles/fish/

We do not recommend the use of canola oil. We will be discussing oils later on in this report. We do not want canola oil to be given to our boys, and will explain in a later section why. We will however provide quick links on page 151 to provide some info on this oil whose main claim to healthfulness is an endorsement from the FDA (Wow ! What a reliable authority! See pages 64-68 and 74-75 of this report and go to this link: http://www.naturalnews.com/029833_non-GMO_foods_FDA.html).


Omega-3 fatty acids are found in oily fish like salmon and flaxseed and canola oils

(continued from page 150) There is also a citizen petition to the FDA which can be found at:
http://www.gmofoodlabel.org/fda.html

The following links on Canola oil are:

Canola Oil: The Real Truth and Myths Debunked 11-17-08 By Dr. Beth Dupree MD, DVMn
http://www.abundantlifeessentials.com/news/canola101.htm

The Straight Dope On Canola Oil http://www.hbci.com/~wenonah/new/canola.htm

When listening to audio provided at the link above, focus on what is said between 6:43 to 7:04 and 7:11 to 7:24 minutes. Link also provided here: http://www.hbci.com/~wenonah/sound/biocar.mp3

The Dangers Of Canola Oil http://www.ehow.com/about_5414785_dangers-canola-oil.html

Independent Holistic News (Many Interesting Articles Written By Doctors & Nutritionists as well as informed citizens): http://www.naturalnews.com/

We were amazed that the following article was written by a school psychologist!!!

Talk about exceptions! It is our well founded belief that psychology for the most part is a seriously flawed profession, as it has been easily exploited by the pseudoscience of psychiatry.

We still are firm in our belief (based on research of what happens in schools and on our own personal experience) that schools are no place for psychologists or social workers, but only for competent teachers who go there to teach and to instill love of learning.

Schools are no place for (at present) poorly educated children (who most likely only need discipline, guidance, good nutrition, and good teaching) to be drugged up.

We feel that this psychologist ironically chose the wrong profession and could have used her insight in the field of Holistic medicine. Nevertheless, life always enlightens us with exceptions, so we have placed her article found at the link below:

http://www.naturalnews.com/026365_canola_oil_food_health.html

The Canola Council of Canada has their own propaganda pages which we have also included:

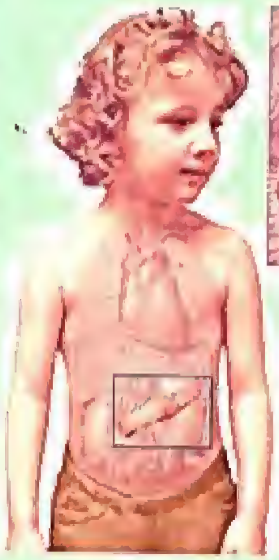
Truths and Myths about Canola Oil (according to them of course!)
http://www.canolainfo.org/news/latest_news.php?detail=27

Processing Canola Oil: http://www.canolainfo.org/canola/index.php?page=6

Though we understand that Canola oil is not healthy, we feel that boycotting Whole Foods because they sell canola oil and use it in some of their products is not a good idea. Whole Foods has done much to make good organic food more accessible to the public and to promote fair trade in developing countries as well as in the US. They also contribute to charities and environmental awareness. A more reasonable approach would be to leave customer petitions asking them to consider using healthier oil options in some of their canola oil-containing products such as coconut, sunflower, walnut, almond, or olive oils, as these oils (unlike canola) have been used for centuries. used for centuries).

On page 147 we explained how safe and natural alternatives for cholesterol regulation (which can also be used to counteract cholesterol increase due to manganese toxicity) are not even considered due to the financial motives of the medical establishment.

The body regulates how much cholesterol is produced according to how much cholesterol the body already has (see pages 91-93 of this report). Seventy-five per cent of the body's cholesterol is produced by the liver (the other 25% is in the brain, see page 141), which is influenced by your insulin levels. Therefore, if you optimize your insulin level, you will automatically optimize your cholesterol.



The pancreas secretes insulin in response to glucose levels in the blood

Insulin is a natural hormone produced by the pancreas that helps to control the level of sugar glucose in the blood, as well as allowing the cells to use that glucose for energy, for without insulin, cells cannot use glucose.

A sixty patient study conducted in Pakistan found that cinnamon in small quantities taken consistently on a daily basis has the ability to improve glucose metabolism and natural insulin production. Cinnamon also lowered blood cholesterol levels in the range of 7 to 27%. This fascinating study can be found at the following link: http://www.ncbi.nlm.nih.gov/pubmed/14633804?dopt=Abstract

PubMed.gov
U.S. National Library of Medicine
National Institutes of Health

Search: PubMed | Limits | Advanced search | Help

Search | Clear

Display Settings: Abstract

Send to:

Diabetes Care. 2003 Dec;26(12):3215-8.

Cinnamon improves glucose and lipids of people with type 2 diabetes.

Khan A, Safdar M, Ali Khan MM, Khattak KN, Anderson RA.

Department of Human Nutrition, NWFP Agricultural University, Peshawar, Pakistan.

Abstract

OBJECTIVE: The objective of this study was to determine whether cinnamon improves blood glucose, triglyceride, total cholesterol, HDL cholesterol, and LDL cholesterol levels in people with type 2 diabetes.

RESEARCH DESIGN AND METHODS: A total of 60 people with type 2 diabetes, 30 men and 30 women aged 52.2 +/- 6.32 years, were divided randomly into six groups. Groups 1, 2, and 3 consumed 1, 3, or 6 g of cinnamon daily, respectively, and groups 4, 5, and 6 were given placebo capsules corresponding to the number of capsules consumed for the three levels of cinnamon. The cinnamon was consumed for 40 days followed by a 20-day washout period.

RESULTS: After 40 days, all three levels of cinnamon reduced the mean fasting serum glucose (18-29%), triglyceride (23-30%), LDL cholesterol (7-27%), and total cholesterol (12-26%) levels; no significant changes were noted in the placebo groups. Changes in HDL cholesterol were not significant.

CONCLUSIONS: The results of this study demonstrate that intake of 1, 3, or 6 g of cinnamon per day reduces serum glucose, triglyceride, LDL cholesterol, and total cholesterol in people with type 2 diabetes and suggest that the inclusion of cinnamon in the diet of people with type 2 diabetes will reduce risk factors associated with diabetes and cardiovascular diseases.

It is so tragic to think that the healing properties of such common foods are virtually unknown among the general population, but perhaps the greatest tragedy is that people do not avail themselves of the internet's great potential in order to inform themselves on these issues because they prefer to take the easy way out and rely instead on the so-called expertise of those who only seem to be truly experts at putting their personal interests first.

The BBC reports that a new study in the Journal of Neuroinflammation indicates that caffeine helps prevent high levels of cholesterol from causing dangerous substances to leak across the blood-brain barrier.

"Caffeine appears to block several of the disruptive effects of cholesterol that make the blood-brain barrier leaky," said Dr Jonathan Geiger, who led the study.

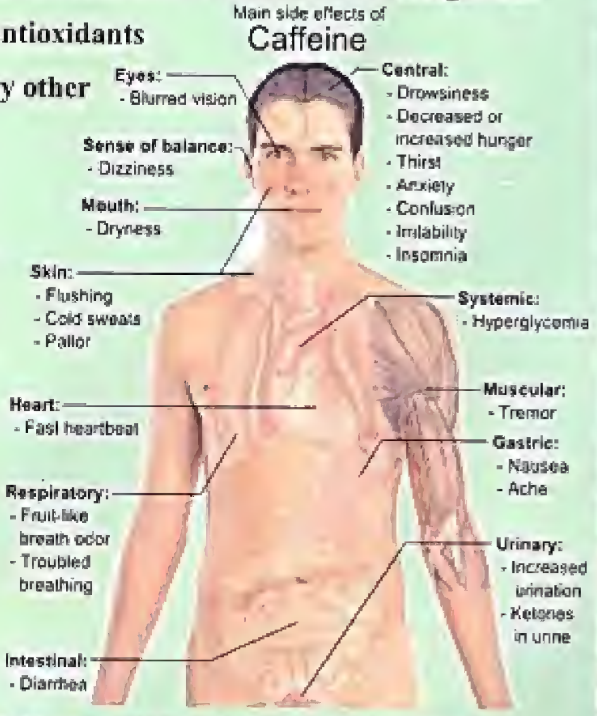
"High levels of cholesterol are a risk factor for Alzheimer's disease, perhaps by compromising the protective nature of the blood brain barrier.

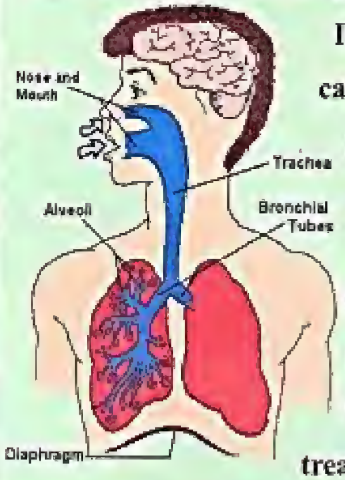
"Caffeine is a safe and readily available drug and its ability to stabilise the blood brain barrier means it could have an important part to play in therapies against neurological disorders."

A spokesman for the Alzheimer's Society said that the barrier seemed to work less efficiently in people who went on to develop Alzheimer's or suffer strokes, and the cholesterol link might explain this.

"This is the best evidence yet that caffeine equivalent to one cup of coffee a day can help protect the brain against cholesterol.

Curiously enough, a BBC report states that according to a recent study caffeine helps prevent high levels of cholesterol that may overwhelm the blood-brain barrier, which under normal conditions efficiently maintains most LDL blood cholesterol out of the brain (view pages 142-143). Despite their use of the word "drug", caffeine is naturally found in foods such as coffee and cocoa. Of course moderate consumption of organic coffee and cocoa does not pose a threat to one's health. Organic cocoa not only has caffeine (less than coffee though) but contains flavonoids (read page 36 for definition) that act as antioxidants (see page 37). It is important to bear in mind that as with any other nutrient or naturally occurring substance with healthful properties, an excess of caffeine can cause adverse effects, (view screenshot to the right) and toxicity can be dangerous.





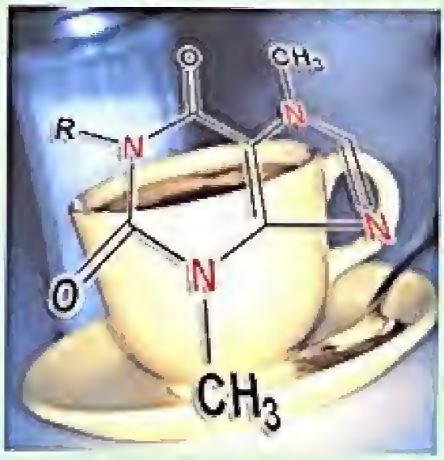
It usually takes about an hour for caffeine to begin having an effect on the body, and the effects when a mild amount is consumed lasts around three to four hours. Caffeine does have the ability to pass through the blood-brain barrier. It is sometimes used to treat respiratory illnesses, for caffeine helps to expand the bronchial tubes (see screenshot above left). It is used as a quick remedy to alleviate asthma attacks while awaiting treatment.

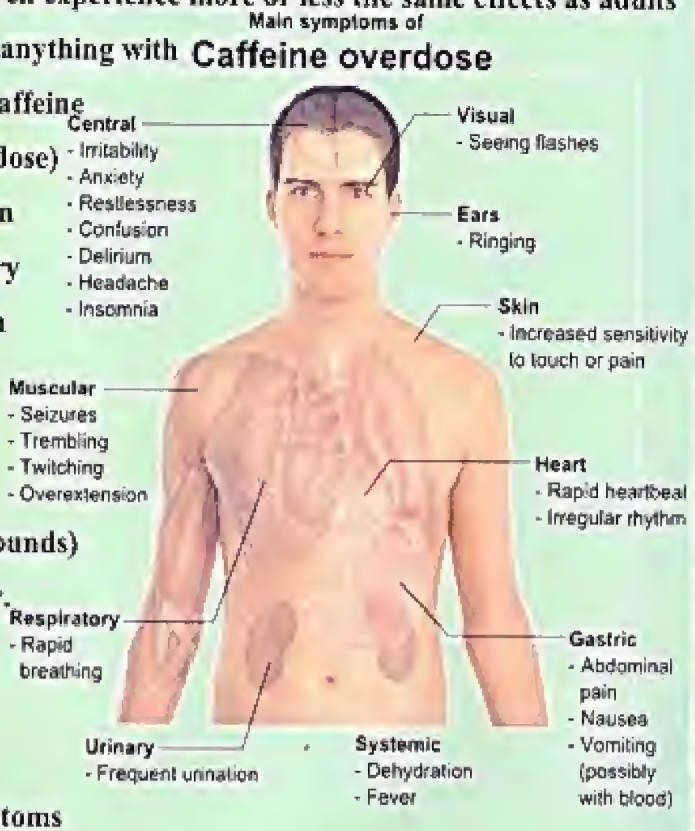
By means of comparison, a 7 oz cup of coffee has the following caffeine (mg) amounts

Drip	115-175
Espresso	100mg of caffeine
1 serving (1.5-2oz)	
Brewed	80-135
Instant	65-100
Decaf, brewed	3-4
Decaf, instant	2-3

Chocolate	mg caffeine
baking choc, unsweetened, Bakers--1 oz(28 g)	25
german sweet, Bakers -- 1 oz (28 g)	8
semi-sweet, Bakers -- 1 oz (28 g)	13
Choc chips	
Bakers -- 1/4 cup (43 g)	13
german sweet, Bakers -- 1/4 cup (43 g)	15
Chocolate milk 8oz	8
Beverages	
3 heaping teaspoons of choc powder mix	8
2 tablespoons choc syrup	5
1 envelope hot cocoa mix	5

Caffeine dosages are measured in milligrams, and the amounts required to produce an effect or to cause toxicity depends in part on individual tolerance to caffeine (which varies) and body weight, though there are average percentages calculated that are thought to be applicable to the general population. To the left is shown a graph that shows the amounts of caffeine found in different types of coffee and chocolate. Children experience more or less the same effects as adults when consuming anything with caffeine. Excess caffeine (when not an overdose) may make children hyper, but contrary to popular opinion it cannot stunt their growth (poor nutrition however can).





In small children an ingestion of 35 mg per kg (2.2 pounds) of body weight can lead to moderate caffeine toxicity. and infants metabolize caffeine very slowly. The amount of caffeine in an average cup of coffee is 50 - 200 mg.

A very severe overdose of caffeine can cause the symptoms showed in the screenshot to the above right. We only mention caffeine in this report because of its apparent ability to preserve the functionality of the blood-brain barrier, as well as to reduce high levels of cholesterol, which are abilities that can help counteract the learning difficulties that result from a cholesterol overload caused by manganese toxicity.

Coffee is also used (organic of course) in the Gerson Therapy which has been viciously discredited as of late by both The American Cancer Society and The National Institute Of Cancer. This therapy will be briefly discussed later on because it is effective not only for the treatment of cancer but for several other illnesses that may strike children, and knowledge of this therapy's existence is something which every parent should possess.

We have explained in this section on manganese overload and its causes, how manganese is connected to the production of cholesterol and how excess levels of cholesterol caused by manganese overload may overwhelm the blood-brain barrier and create learning difficulties. We also briefly delved into the perils of low cholesterol, and how it is important to keep the body healthy so that the body's natural cholesterol regulatory system can be kept functioning efficiently. We discussed how manganese overload is mostly due to man-made pollution rather than the consumption of dietary manganese from healthy foods, and spoke about the impact of that pollution on the environment.

Upper Level of Intake

Note: UL stands for "upper level of intake".

Manganese intake beyond that normally present in food and beverages could represent a health risk, but there are insufficient data to set a UL.

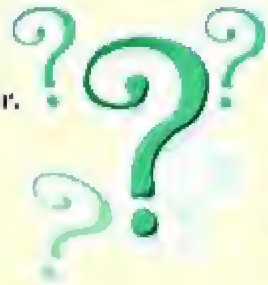
But perhaps what should be most understood from this section is that manganese is an essential mineral for rapidly growing children. Manganese helps to make cholesterol, and cholesterol helps to make Vitamin D. It is so necessary for growing infants that G-D designed human breast milk to contain approximately of 3.5 mg manganese per liter (2.2 pints) of milk (look at illustration above right and to the right).

Rationale: The AI for 0-6 months was calculated by multiplying the average intake of breast milk (0.78 L/day) by the average concentration of manganese in breast milk, and rounding (FNB:IOM 2001). The figure used for breast milk was 3.5 µg/L based on the studies of Anderson (1992), Aquilo et al (1996), Casey et al (1985, 1999) and Stastny et al (1984). The AI for 7-12 months was set using the estimates of Gibson & De Wolfe (1980) for average consumption of 6- and 12-month old babies of 0.071 and 0.080 mg/kg, respectively. Based on reference weights of 7 and 9 kg for these ages, the total intake from milk and complementary food would be 0.500 and 0.720 mg/day. The second method was to use body weight adjustment to extrapolate from adult data, giving a figure of 0.567 mg/day. Using these data, the AI was set at 0.600 mg/day.

The AI for infants of 7-12 months is much greater than that for 0-6 months as the concentration of manganese in breast milk (which is deemed to be the sole source of manganese for infants of 0-6 months) is much lower than in the foods included in the diets of older infants.

Link to info above: http://www.nrv.gov.au/nutrients/manganese.htm

Question on which to ponder:



Several studies have stated that low levels of cholesterol can lead to criminal behavior. deleterious for later brain development and performance [65, 66]. Moreover, many investigations have reported that adults with low-blood cholesterol exhibit aggressive, suicidal, or criminal behavior [67–70], and the possible cause could be a reduction in

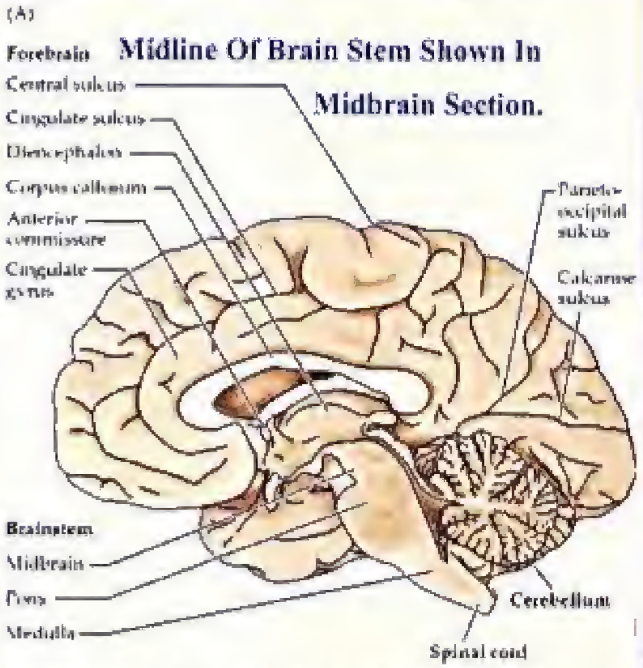
It has been said that low serum cholesterol levels have been observed in prisoners, homicidal offenders, those who attempt suicide, and people with violent behavior.

First, it is important to realize that the body makes all the cholesterol that it generally needs, and that such low cholesterol levels could really be a sign of a dysfunction in the synthesis and regulating mechanisms of cholesterol, in which case the low cholesterol levels are a side effect of some other health problem (or external factor) that is creating the regulatory malfunction. Dr. Mercola (whose expertise we highly value) has also written articles speaking on the low cholesterol –violent behavior link. While we are in agreement that nutritional deficiencies can and indeed do in certain cases affect behavior, we do not think that this is the cause of widespread crime and increased hostile behavior in modern society. It is believed that the loss of cholesterol in the membranes can cause a reduction in the number of serotonin receptors in the brain. Serotonin is a biochemical which is derived from tryptophan (see page 43 of this report). Serotonin is found in the gastrointestinal tract, in platelets, and in the Central Nervous System. Around 80% of the body's serotonin is found in the gut where it's role is to regulate intestinal movements, the other 20% of the body's serotonin is produced by serotonergic neurons which are deep in the mid-line of the brain stem. This serotonin is found in the

WHAT ARE PLATELETS? - Platelets are not really cells but rather cell fragments that are in the blood, and whose purpose is to aid in blood clotting. The reason that they are not real cells is because they do not have a nucleus. Cells have a nucleus with DNA, so platelets have no DNA. The normal amount of platelets in the blood (platelet count) is 150,000-350,000 platelets in each micro liter of blood. There are approximately 1,000 micro liters in one milliliter, and there are 1,000 milliliters in a liter.

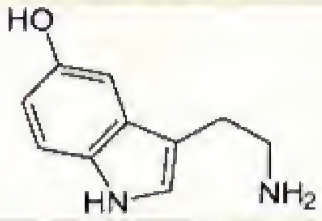
central nervous system, and as mentioned on page 43 regulates mood, sleep, appetite , and impulse control, as well as affecting certain cognitive functions such as memory and learning.

Enterochromaffin cells are found in the epithelial lining of the digestive tract lumen (see pages 102-103). These are the cells that are responsible for producing the serotonin in the digestive tract (the majority of serotonin in the body).



Midline Of Brain Stem Shown In Midbrain Section.

Serotonin



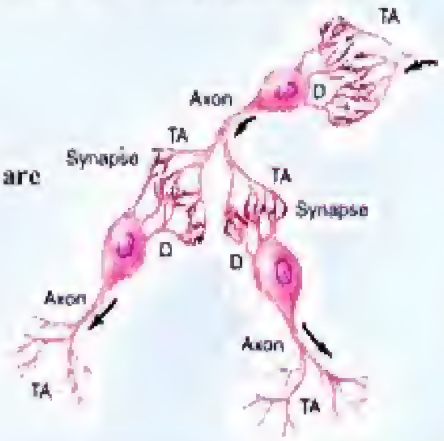
Due to the fact that majority of serotonin is produced in the digestive tract, and that serotonin is eventually metabolized by the liver (which happens to also produce blood cholesterol), it is possible (though this is only a theory) that an abnormality in liver and digestive tract function (which would impair the cholesterol regulatory process- see pages 91-93 and pg 152) either caused by poor diet or exposure to some other toxin might cause a decrease in serotonin production, or hinder the ability of the serotonin receptors to bind to the serotonin which normally activates these receptors. It is important to understand that the body is like an eco-system, and as such body systems (be it digestive system, respiratory system, etc.) and their individual functions depend on the health of each other in order to function properly.

Useful Terms To Know:

Neurotransmitter : This term is used to describe a chemical substance that is produced by a neuron (see page 140) and which is used by a nerve cell to communicate with other nerve cells. It communicates by transmitting nerve impulses across a synapse.

Synapse : The point of contact (or meeting point) across which a nerve impulse passes from an axon terminal to a neuron (view illustrations to the right and on the upper left of page 141). There are 1 to 5 quadrillion synapses in the average adult brain, and 10 quadrillion synapses in the brain of a three year old.

Each of the brain's neurons have around 7,000 synaptic connections to other neurons.



Serotonin is one of the body's most abundant neurotransmitters (see page 157 for definition). According to what the studies claim depressed people have reduced serotonin levels. The cause could be either nutritional factors that have negatively affected how the body functions, or external causes that normally would cause grief, oppression, loss of a love one, etc.

Contrary to what the pseudoscience of psychiatry would have one think, brain chemistry does not govern emotions, but rather emotions caused by external factors or spiritual health affects the brain. Psychiatry's twisted reasoning is akin to saying that

the flu causes the virus instead of the virus causing the flu. Just like a virus can affect the body, external and non-physical factors can affect brain chemistry due to the fact that the most vital essence of man is not physical but spiritual.

We have always found it ironic that psychiatry and psychology makes ample use of the prefix "psyche"(meaning "soul" in Greek) while clearly manifesting in their views and so-called "thesis" their belief in man not having a soul that requires a certain level of spiritual health. This is evident each time that they perceive that each emotional/spiritual problem (there is no such thing as mental illness) has its roots at a purely biological level in the physical body. Sadness is most of the time caused by rational external factors outside oneself, or when one's spiritual needs are not being addressed. Situations created by unique circumstances that surround us as individuals cannot be hereditary neither on a genetic level because souls and spiritual states are not hereditary, only characteristics purely related to the physical body are. Intelligence may in part be hereditary (and in part the product of nurturing) because you need a functioning brain to learn. However, sadness, or what is really sinful behavior (characterized as criminal behavior), has to do with the state of our soul and our consciousness. Something which cannot be understood if one's perceptions are based purely on the physical while negating the existence of G-D and the need of every human to have spiritual health. It is true that in certain few instances perceived disorders may have some cause in our physical bodies, but even in those instances they are mostly based on nutritional deficiencies and poor diet.

So in reality those problems are not psychological disorders but nutritional ones which can be changed by diet modification.

If many of these "disorders" are genetic then why were there not so many dysfunctional people several generations ago as there are today in modern society? If you have brown hair it is because of your genes. It means that it is a trait that was passed from parent to offspring for centuries. The problems that modern society encounters have not been around for centuries, but rather are the result of societal changes that have negatively altered moral perceptions, thus causing a spiritual health crisis at large.

It is the absurd view which claims that it is our physical body which decides what we will be and how we will feel , rather than our experiences , trials, and unique outlook on life (Is spirituality and religion also governed by neurons and hormones? Is virtue or sin also within the domain of biochemistry?) that has even led normal behavior to be branded as "abnormal". One sad lesson that history gives us of this irrational phenomenon is the emergence of a "mental illness" during the 1800's called Drapetomania. Click on image below to see more info.

IV. FACTORS THAT ALTER NEUROTRANSMITTERS AND EMOTIONS.

A. Five Negative Factors That Can Alter Brain Chemicals Of Emotions. There are several factors that can alter neurotransmitters for the worse and have potentially profound influences on the emotions. They are:

Slaves led very unhappy and oppressed lives. It is hard to put oneself in their unenviable place and so be able to adequately understand the magnitude of their daily suffering. Their tragic yet distant situation can nevertheless help us to understand the abundant flaws that riddle the "emotions are purely caused by biochemistry" theory.

While certain physical factors may affect our emotions, such as someone who just lost an arm feeling sad. The loss of the arm itself is not causing the emotions of sadness, but rather the reality that such a loss represents to that person's outlook on life.

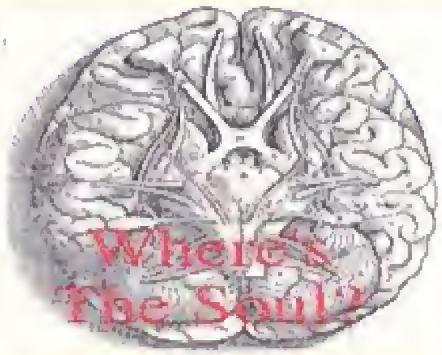
Example: An unconscious person would not feel sad at losing an arm because of the lack of awareness that accompanies such a state. It is the awareness, as well as the perceptions that shape that awareness which makes us suffer.

This is why Ecclesiastes 1:18 says, "For in much wisdom is much grief: and he that increases knowledge increases sorrow."

When examining slavery,which gave rise to the Drapetomania diagnosis, it is important to understand how the diagnosis served a purpose (albeit a sinister one). The people who were enslaved were being horribly oppressed, those who enslaved them were guilty of great injustices while profiting greatly from their victims' oppression. Drapetomania was meant to disguise the reality of all these negative factors, in order to avoid a change that would lead to the cessation of those very factors. The victims' normal behavior was made to look like a mental illness in order to cover up the true cause of their behavior. The reason why the true cause had to be hidden was because of what it revealed, it would only serve to reflect the crimes of the plantation owners who oppressed the slaves. This of course allowed the plantation owners (for no one can own another human being) to continue to benefit financially from the oppression that they created while making their victims appear abnormal.

Likewise in today's society the bogus " biochemistry causes emotions theory" which dominates bio-psychiatry serves the purpose of disguising reality while providing great financial profits for those who are in reality oppressing others.

The factors that are conveniently being hidden are 1) the moral crisis that modern society is facing, 2) rampant poor nutrition among the populace caused by the greed of food corporations, 3) that man needs a moral compass in life and that the Bible provides this, 4) that all people have a right to live under a fair and just system free from oppression and exploitation.

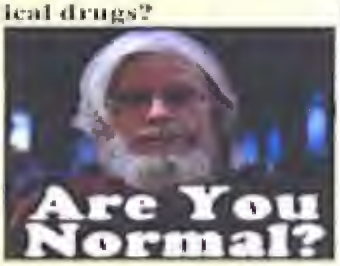


If the brains of 19th century slaves would have been examined, no doubt many of them would have had low serotonin levels, or other things going on in their brain chemistry, but the cause of that biochemical composition would be due to external factors such as constant oppression and poor diet. These factors were not hereditary in a genetic sense (though sadly slavery for a time was a hereditary state), neither was it indicative of anything wrong with the slave.

What caused the slave's anguish which affected his brain and lowered his serotonin levels? Was it a genetic biochemical defect or was it due to an external cause created by others that caused spiritual/emotional anguish which in turn had an impact on the physical body.

Why did the plantation owners commit so many cruelties, was it because of a biochemical reaction in their brains, or was it due to their poor spiritual health and how they had been conditioned?

Are beliefs controlled by brain chemicals? Can they be manipulated by pharmaceutical drugs?



Who gets the final say on what is normal? If society refuses to follow what the Bible says is normal, who are they to make up their own fictitious reality with their petty mandates of normalcy? Apart from eternal Biblical truths which are the only guide to true normalcy, what is considered normal is a concept which differs from society to society and from time to time.

In today's society (and this at least is a positive change) it would not be considered normal to have and abuse slaves. We know that at least in this belief modern society is right, because the Bible tells us not to oppress others (Zechariah 7:10, Exodus 23:9, Ezekiel 22:29). However, the Southern U.S. in the 1800's considered it absolutely normal to have and to oppress slaves, even though such a practice was in reality abnormal. Likewise in modern society it is considered normal for a woman to go to an abortion clinic and kill her unborn child and then go home as if nothing has happened while a hundred years ago such an attitude would have been considered abnormal . In this case it is past society that is correct in their view, for the Bible indicates that each life has a purpose from conception (Jeremiah 1:5).

We should also consider that even in our time what is considered normal in one society is taboo in another.

These words written on December 1st 2011: The photo seen above right with an old weird man and the words "Are you normal?" was a popup image that appeared on the computer while I was working on this nutrition report using the computer of the Central Cranston library. I did not add the words "Are you normal?". The image seen above is exactly as it was when it popped up. I immediately saved it because I knew what it represented. The old man seen above is one of the pervert psychiatrists employed by DCYF (and affiliated agencies) to stalk me. I saw this very man at the Central Cranston Library (in the study area) nearly two years ago when I sat down to work. He has placed several videos on the internet talking about schizophrenia, depression (as in "clinical depression"), & other fictitious illnesses. The videos which he has placed have been there for three years or less (which coincides with the period of time in which these agencies have been victimizing me). I know that all this sounds like something from a wacky movie, but all these surreal things are really happening to me, and the goal of these agencies is to pass me off as "crazy and phobic" to protect themselves from exposure. Heads would roll if the truth came out & Ana would be serving a hefty jail sentences for all her concealed crimes.

On Depression, Hope, Recovery, Psycholog...
07:09 - hace 3 años
dailymotion.com

If someone in the U.S. would get offended because another person handed them something with their left hand, others would perhaps think that the offended person is not normal, yet this behavior is common in Muslim society (look at screenshot below and link).

Among Muslims, the left hand is reserved for bodily hygiene and considered unclean. Thus, the right hand should be used for eating. Shaking hands or handing over an item with one's left hand is considered an insult.[2]

Public displays of affection between people of the opposite gender, including between married people, are frowned upon everywhere more conservative values hold sway. Public displays of affection include activities as minor as hand-holding.[3]

http://en.wikipedia.org/wiki/Etiquette_in_the_Middle_East

We might think that it's strange for a married couple to get in trouble for holding hands in public, yet this is the norm in many societies. Should these societies be diagnosed with a biochemical imbalance for their beliefs and drugged up?

The irony is that in an era when Western society has accepted so many truly abnormal things as normal (such as genetically modified food, abortion, and sexual misbehavior) there is such an obsession with the labeling of what is normal or not. So according to modern Western society it's normal to eat a tomato with fish genes or to kill an unborn child, but it's not normal for someone who has suffered much to be sad or to be stressed out (they need to be drugged up for that).

So now that we have discussed how the state of the body is really but a mirror of external factors: diet, stress caused by situations, spiritual health, lifestyle choices, we can begin to understand how low cholesterol (though it may affect the physical body, and perhaps even our mood to some extent) is not really the cause of suicidal or criminal behavior. Societal changes and one's individual outlook on life are the cause. While low cholesterol may cause certain health problems we do not believe that the low cholesterol craze is the real cause behind the all too frequent crime and immoral behavior of Modern Times. First of all, most delinquent people are not into nutrition, and the typical high fat processed diet is not conducive to low cholesterol levels.

A criminal who robs a bank and then goes to McDonalds is not likely to have low cholesterol levels.

Fast Food Statistics Are Staggering

- Every day ¼ of Americans eat fast food.
- The typical teenage boy in the United States now gets about 10% of his daily calories from soda.
- A fast food soda that sells for $1.29 costs the restaurant about ten cents, a markup of more than 1200%.
- Children often recognize the McDonald's logo before they recognize their own name.

Hypercholesterolemia (too much cholesterol) is still more common that hypocholesterolemia (too little cholesterol). As several honest researchers have said " Brain chemistry is not a cause but rather an effect." In other words, there is something which has an external cause that is causing the changes in brain chemistry.

These words were written on December 1st 2011: As explained before on page 90, I could never finish this nutrition report because I had to begin another report in late October 2010 refuting some bogus diagnosis which a psychologist (who has since died) made on my sons. That report was over 200 pages long and was first published in late April of this year . Only days after the online publication of that report my laptop was stolen on May 5th along with a flashdrive which contained the pdf file of the complete nutrition report. Visit these sites to learn more about my bizarre case:

http://gonarthouse2.picturepush.com/album/172053/6939185/Picture-Box/How-I-have-Continue-To-Fix-....html

http://gonarthouse2.picturepush.com/album/172053/6977168/Picture-Box/Cooking-Video-Part-One

Friday June 11th 2010

To DCYF Hearing Officer.

We, Wenceslao Gonzalez Jr. and Cibeles J. Gonzalez, parents of Wenceslao Adonis Gonzalez III and Galileo Basilios Gonzalez are writing this letter to demand that our rights be respected, and that our sons be fed an organic kosher diet as they had when they were with us.

Our Constitutional rights have been consistently violated throughout this whole affair, and we were lied to in September 2009 when we first spoke with the social worker Heather Fogg.

It was during this, our first meeting with her that we asked that our children be fed a kosher diet consisting of organic and natural foods. We were falsely told that DCYF can comply with such a request ONLY when there has been an established medical condition, yet in your Foster Care Regulations booklet it states under [Section P. Meals] that the foster parent shall provide for any special dietary needs for the child as determined by a proper medical authority OR dictated by the child's religion or culture. Since there are many Hispanic Jews this does not in any way contradict Spanish culture, despite the stereotypes that abound.

The fact is that we were raising our boys as Messianic Jews, and they never, while in our care, ate anything that was prohibited in the Bible. Whether our religious beliefs have any validity or not in your eyes is irrelevant, for your views do not in any way give you the authority to violate those beliefs. Under Constitutional law your agency has no right to pass judgment on our religious beliefs, to violate them, or to impose your own different views on us or on our children, which Constitutional law gives us the right to raise as we see fit, provided that we do no harm to them, nor teach them to do harm to others.

The diet which we wish them to follow cannot do any harm to them, quite the contrary, modern science has proven that the meat of animals prohibited in the Bible are indeed harmful to one's health. So why deny our request unless your intention is to openly show your disdain for our

religious beliefs in an effort to demean us with your persistent indifference.

If our reasonable request is refused, then it can be said that your agency is intentionally violating our rights as guaranteed in the First Amendment with regard to freedom of religious conscience, in addition to the rights that you have violated (which are upheld by the Fourteenth Amendment) at having denied us TRUE due process in the actions that you have taken.

Since past experience has shown that your agency does not favor cooperation when it leads to the safeguarding of parental rights, we hope that your attitude may differ on this occasion, and that this simple request be granted. If not we will have no other choice than to continue to protest in a civil manner until the request is granted, as we feel that not only our religious principles are at stake but our sons' physical health as well.

Sincerely,

Wenceslao Gonzalez

Cilah Bayles

3. The foster parent shall encourage and arrange for the child to have contacts and friendships with other children.

4. The foster parent shall make available materials and equipment appropriate to the child's age and ability for both active and quiet play.

P. Meals

1. The foster parent shall provide the child with a minimum of three (3) well-balanced meals, or the equivalent, each day at regular times, with not more than fourteen (14) hours between the evening meal and breakfast.

2. The foster parent shall not exclude the child from family meals.

3. The foster parent shall provide for any special dietary needs for the child as determined by a proper medical authority or dictated by the child's religion or culture.

Q. Required Notification

1. The foster parent shall notify the agency prior to allowing any person to visit in the home for a period in excess of three (3) days.

2. The foster parent shall notify the agency prior to making plans for the care of the child by another person for a period in excess of forty-eight (48) hours.

3. The foster parent shall notify the agency immediately in any of the following instances:

   a) The death of a child;

   b) A serious injury or illness involving medical treatment of the child;

   c) A serious emotional or behavioral crisis which may endanger the child or others;

   d) When a child has been subjected to alleged abuse or neglect, or has been the alleged victim of assault or other physical or sexual abuse;

   e) Unauthorized absence of the child from the home in accordance with Department policy;

   f) Removal of the child from the home by any person or agency other than the placing agency; or any attempts at such removal.

   g) Any fire or other emergency requiring overnight evacuation of the premises;

   h) Any exclusion of a child from school or involvement with police;

   j) Any changes in household composition.

4. The foster parent shall inform the agency as soon as possible, but not more than five (5) working days following any circumstance listed below:

   a) Any serious illness or death in the household;

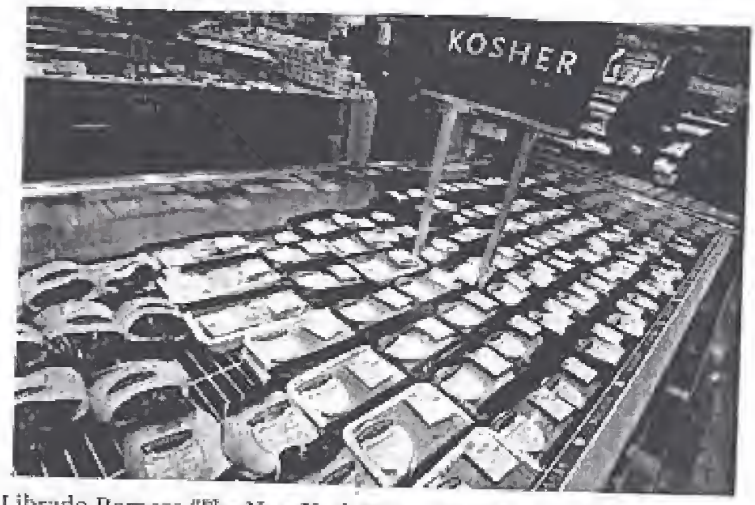
   b) The permanent departure of any member of the household;

SATURDAY, APRIL 17, 2010

More People Choosing Kosher food for Health

MORE PEOPLE CHOOSING KOSHER FOR HEALTH

By KAREN BARROW



Librado Romero/The New York Times Is kosher food safer and healthier food?

An ancient diet has become one of the hottest new food trends.

A growing number of supermarket shoppers are going kosher — not for religious reasons, but because they are convinced the foods are safer and better for health.

Kosher foods, which must meet a number of dietary and processing rules to comply with traditional Jewish law, are the fastest growing ethnic cuisine, reports the market research firm Mintel. Sales of kosher foods reached $12.5 billion in 2008, an increase of 64 percent since 2003.

Reflecting the growing interest, Manischewitz, a major kosher food company, held a kosher cook off last month in Manhattan. It featured five chefs from around the country who prepared dishes with the most traditional of kosher-recipe ingredients: chicken broth.

Four of the chefs do not keep kosher but look for certain kosher products in the supermarket. One of those is Julie DeMatteo, a 68-year-old grandmother from Clementon, N.J., who is not Jewish but regularly shops for kosher foods. She believes they are more closely monitored during their processing and "more consistent in taste," she said.

Friday June 11th 2010

To DCYF Supervisor,

We, Wenceslao Gonzalez Jr. and Cibeles J. Gonzalez, parents of Wenceslao Adonis Gonzalez III and Galileo Basilios Gonzalez are writing this letter to demand that our rights be respected, and that our sons be fed an organic kosher diet as they had when they were with us.

Our Constitutional rights have been consistently violated throughout this whole affair, and we were lied to in September 2009 when we first spoke with the social worker Heather Fogg.

It was during this, our first meeting with her that we asked that our children be fed a kosher diet consisting of organic and natural foods. We were falsely told that DCYF can comply with such a request ONLY when there has been an established medical condition, yet in your Foster Care Regulations booklet it states under [Section P. Meals] that the foster parent shall provide for any special dietary needs for the child as determined by a proper medical authority OR dictated by the child's religion or culture. Since there are many Hispanic Jews this does not in any way contradict Spanish culture, despite the stereotypes that abound.

The fact is that we were raising our boys as Messianic Jews, and they never, while in our care, ate anything that was prohibited in the Bible. Whether our religious beliefs have any validity or not in your eyes is irrelevant, for your views do not in any way give you the authority to violate those beliefs. Under Constitutional law your agency has no right to pass judgment on our religious beliefs, to violate them, or to impose your own different views on us or on our children, which Constitutional law gives us the right to raise as we see fit, provided that we do no harm to them, nor teach them to do harm to others.

The diet which we wish them to follow cannot do any harm to them, quite the contrary, modern science has proven that the meat of animals prohibited in the Bible are indeed harmful to one's health. So why deny our request unless your intention is to openly show your disdain for our

religious beliefs in an effort to demean us with your persistent indifference.

If our reasonable request is refused, then it can be said that your agency is intentionally violating our rights as guaranteed in the First Amendment with regard to freedom of religious conscience, in addition to the rights that you have violated (which are upheld by the Fourteenth Amendment) at having denied us TRUE due process in the actions that you have taken.

Since past experience has shown that your agency does not favor cooperation when it leads to the safeguarding of parental rights, we hope that your attitude may differ on this occasion, and that this simple request be granted. If not we will have no other choice than to continue to protest in a civil manner until the request is granted, as we feel that not only our religious principles are at stake but our sons' physical health as well.

Sincerely,

Wenceslao Gonzalez

Celso Gonzalez